COAL AGE

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The Ever-Running Anthracite Mines

IN THESE days of closed works and short time in all kinds of industry, north, south, east and west, with a lack of interest and no orders even for farm products, it is refreshing to look at the ever-running anthracite mines working every day regardless of the mild winter and industrial shutdowns.

The good fortune of the anthracite region being so fully assured makes the coal industry as a whole quite noticeably more fortunate than any other. The anthracite output is only about one-sixth of the whole coal production of the United States but as the cost of mining and preparation is roughly three times as expensive the ratio of importance is rather as three to eight than one to six.

The Rocky Road of Reform

PRESENT indications are that the Calder bill for regulating the coal industry is dead. The hearings before the La Follette committee have not only developed unexpected opposition within this presupposed friendly group but have been prolonged to such an extent that it is not conceivable that the measure in whatever form reported out by the Committee on Manufactures can be considered and passed in the House even should it get through the Senate. The number of days before March 4 are too few to permit of any such possibility.

Interest centers now on the form of measure the La Follette committee will report out after they have digested the evidence they are now taking. It is forecast that this committee will report out a bill quite different from the Calder bill originally placed before it. The provisions requiring reports from coal companies and railroads will be retained in some form but that is about the only resemblence the new bill is expected to bear to Senator Calder's proposal. It has been pointed out that those who have appeared in opposition to the regulation have not registered much complaint about having the coal industry give information to the government.

Whenever this has been discussed the point has been made that the objection is not to giving data but to having the form of the figures supplied so rigidly prescribed as to amount to regulation of business bookkeeping. It was just such a point as caused the original split between the National Coal Association and the Federal Trade Commission, which was followed by the Maynard suit.

The Calder committee has been discredited in Washington. No one conceives that the incoming administration will follow the lead of Senator Calder, and many are of the opinion that when Mr. Harding takes up the Presidency he will let this be known. Senator Calder had a chance with his bill just as long as he could keep the excitement up and have a fresh victim to offer the daily press each day. Just as soon as consideration was given the matter by the Committee on Manufactures and they found that there was much more to the story than had previously been brought out, hope of justice and fair play was had by the coal industry. From open hostility to an attitude severely but sensibly critical, best describes the apparent change that has taken place in the La Follette committee since it began its hearings.

All that remains now to be done before the Committee on Manufactures is to keep the "record" straight. The real work is to be done in preparation for the next Congress and its successor. We expect Senator Frelinghuysen to announce the new administration's program for coal, and he may do it soon. It is certain to be advanced in such a friendly manner that the coal industry can begin by co-operating to make it better. There is a large element in the coal industry who today see the wisdom of meeting the government and the public more than half way in the desire for protection, real and fancied, in the matter of coal supply. These men are not saying much now but before the next Congress reaches the point of action on the subject they will have been heard. A constructive program on which the coal men can meet the government is in the making. At present it is coming from at least two different parts of the industry—producers and wholesalers. It is not necessary that these two views be amalgamated before they go before the public, but it would be much better were it so. The important thing is that, having been on the defensive for years, coal men are developing sufficient courage to discuss within their ranks a program that recognizes the public nature of their industry.

Effect of Criticism on Shipping Board Bids

SHIPPING BOARD officials are having difficulty in coming to a decision regarding the prices they will pay for coal in the next twelve months. The failure of general response on the part of the trade to their first tenders for bids caused the Shipping Board to reject those first offered and to put out a second offer. Between the first and second bids the market had fallen and the prices named in the middle of January were generally lower than those previously made. Only one bid, however, was accepted of the many that were made.

It does not appear that the prices named in the second lot of bids were other than generally fair, although for the most part well above the current spot market. That not more of the tonnage was closed under these bids probably was due to the intense scrutiny that is being given to all matters relating to the Shipping Board. To enter into contracts for coal at the present time, at prices above the current spot quotations, would direct criticism to the Board. We can only suppose that the Shipping Board, prompted to caution by some of its

past mistakes in the purchase of coal, is earnestly endeavoring to make connections with thoroughly responsible shippers at prices that can be defended before any possible future "Calder committee." On this assumption its action in rejecting the greater part of the second lot of bids is not to be wondered at.

The continuous rejection of bids in a weak market is, of course, obviously intended to obtain lower figures. Just how far this can be pursued remains to be seen, but the Shipping Board may yet find itself without contracts. Many of those who bid on these requirements in January will not bid again, for the very obvious reason that they are obliged to figure so much closer. If the figures are not satisfactory in the bids that are to be opened the last day of this month, it probably will be necessary for the Shipping Board to depend upon the open market. It will help the general situation to have the Shipping Board fully covered by contracts, and we are, therefore, hopeful that the trade will take one more chance and that the Shipping Board will cover its needs in every respect with this last call.

Own Your Home or Rent?

IN A SERIES of articles relative to the Mingo County troubles, Winthrop D. Lane of the *New York Evening Post* questions the equity of the so-called feudalistic conditions in the Williamson-Thacker and other coal fields of West Virginia, avoiding, however, giving any solution of the problems involved. Mr. Lane is puzzled. He wants a normal solution for an abnormal situation. He admits that the operator's ubiquity as employer, merchant, landlord, etc., has arisen out of the early mining conditions and that those conditions have not changed. But still he wants the miner to live as if a new situation had arisen.

Is Mr. Lane in this a "foreward-looking man" or is he a retrogressive? Is it better for the miner to be the lord of his residence and so compelled to work for one man or forfeit his property, or is it better for him to be a footloose tenant, perfectly free to move if he does not like his working conditions or if the mines close down? It would seem better for the employer that his employee give bond for good behavior in the ownership of a house, but surely it is better for the worker that he bind himself in no such manner to a plant that may not work steadily, to an employer who may not favor him or to a company that may not be successful.

Mr. Lane says rightly that the operator can and often does thrust an employee out of his home if he will not work. On the other hand, if the man owned his house he and his wife and family would have to leave it if the work given him were not desirable. In that case he would have to buy another residence, and the one he would leave he might be unable to sell. If the employer in his home town was not fair there would be no influx of miners to that town to purchase his abandoned property.

It would seem that the tenant in this case is the freer man. The freeholders of England, of whom so much has been written, said and sung in prose and in verse, were not independent because they owned their homes but because they possessed the land on which their living was made. The miner would have to own his little mine if he were desirous of a like freedom.

It is true that with a commuting and trolleying system such as it found in parts of Pennsylvania, Illinois and Indiana it is possible for workmen to live where they will and travel to the mines on the railroads. That traveling, however, is not a light burden on the miner, especially where, as in the Middle West, he pays an altogether inadequate commuting rate and receives accordingly poor service, even though in general the railroad sustains a loss on the running of miners' trains. To travel in cold, drafty cars for an hour, night and morning, and at scheduled times is no small affliction from which the West Virginia miner living almost on the job may well be grateful that he is delivered. Especially should he remember that advantage on days when the working hours are shortened unduly by lack of cars.

Furthermore, the rents which the mine worker has to pay are abnormally low. If he would spend the money that building would cost him in buying government or state bonds or high-grade securities he would find when taxes and repair bills were paid that in almost every case these securities would net him as much as the ownership of a house. A man around the mines owns his home more for what it "means to him" than for what it will save him. He buys a house like a piano or graphophone because he would like to have one. He is willing to lose more interest than he saves rent. That is why he will often buy despite the low rent offered by the operator landlord. But in this he is quite ill-advised. In most cases an old house in a small town is as hard to sell as a piano, and for the employee working for an ungenerous employer or one likely to go bankrupt or close down it is a parlous investment.

Furthermore, the owner of a town often times gives thought to making his homes sanitary and attractive. The homes which the men build for themselves, except in the Middle West, are rarely as good as those erected by the operator. The Colorado Fuel & Iron Co. was condemned far and wide for the shacks in which some of its men lived. The dwellings—is it just to use that word?—were built by tenants of the company which the Fuel & Iron Co. bought out. The men leased the land for a low rental. The houses were a disgrace to Colorado, and the United Mine Workers made much ado about them. The company ultimately bought them at more than a fair price, paying what the tenants asked for them. They were torn down, and houses with pretty gardens replaced them.

Would Mr. Lane have the miners live in houses like those which the public condemned; would he have them exist in huts such as the "sagers" of West Virginia formerly used for the rearing of their families or would he have model houses such as men like the deceased Colonel Leckie used to build and such as the Semet-Solvay people construct for their employees? Mr. Lane is a fair man, as his articles attest, and he is puzzled and has no answer ready.

No wonder! it is a hard query to puzzle over. West Virginia, like all mining sections, coal, metal and nonmetal, has its problems, but it is not right to condemn what perhaps measures up more equitably in the long run than any other condition. It is too bad, for instance, that the sailor cannot have his wife and children with him; too bad that he even sleeps by night in the bed and sits by day at the board that his employer provides. His every hour is on his employer's ship. Yet surely this is a necessary condition; he cannot have an airship to take him to his work night and morning and to his lunch at noon. His life is not even feudal. If the mine worker is a villein, the sailor is a serf.

FIG. 1. CRANBERRY CREEK BREAKER, SHOWING CAR PLANE ON LEFT AND DRAG-SCRAPER LINE ON RIGHT

Breaker-Operation Economies as Illustrated By Cranberry Creek Preparation Plant

Culm-Bank and Mine Coal Not Mixed—Large Coal Kept Traveling on the Finer Material—Rice and Barley from Mine Coal Is Not Jigged—Culm Is Run to the Dump—Dragline Will Save Dump Breakage—Tests Determine How To Set Rolls

BY DEVER C. ASHMEAD
Wilkes-Barre, Pa.

AS THERE are two kinds of coal which are separately treated at the Cranberry Creek Coal Co's. plant, near Hazleton, Pa., there are practically two independent operations under the same roof. The Cranberry Creek plant illustrates many of the cardinal principles of successful breaker operation. It shows in particular the care that is being taken to increase the quantity of prepared sizes and to reduce the amount of boiler coal and culm.

Fig. 1 depicts the breaker, showing the loaded mine cars being hauled up the plane, to be discharged at the top of the structure and on one track, the empties descending. The two tracks to the left of the plane extend directly down the slope into the mine, and the one at the right handles cars coming from several drift mines. This latter track will be displaced soon, as it is the intention to install a dragline conveyor to handle what in this case might be called "surface coal." In a short while this coal will enter a Heyl & Patterson rotary dump at the foot of the incline and be discharged, and thence be conveyed to the top of the breaker by means of a scraper line.

Alteration of that part of the plane that extends into the mine also is being considered. As will be shown later in this article, a change to a dragline scraper would almost pay for itself in one year. To the left in Fig. 1 may be seen one end of the old boiler house, now in process of demolition. The mine is completely electrified and steam is now used only for heating.

To the right, extending from near the ground to the top of the breaker, may be seen the dragline which raises the culm-bank coal from the point where it is dumped by the bank cars. Under this dragline may be seen another extending horizontally. Mention of this conveyor will be made later in this article.

CULM-BANK AND MINE COAL ARE NOT MIXED

The breaker is divided into two distinct parts, one handling freshly-mined coal and the other preparing bank coal. At no point during the preparation process is the freshly-mined product mixed with material coming from the culm bank. Thus when a customer orders coal from this plant, he may be assured of receiving exactly what he has ordered and not a mixture of the two fuels.

In case of a breakdown, the design of the breaker is

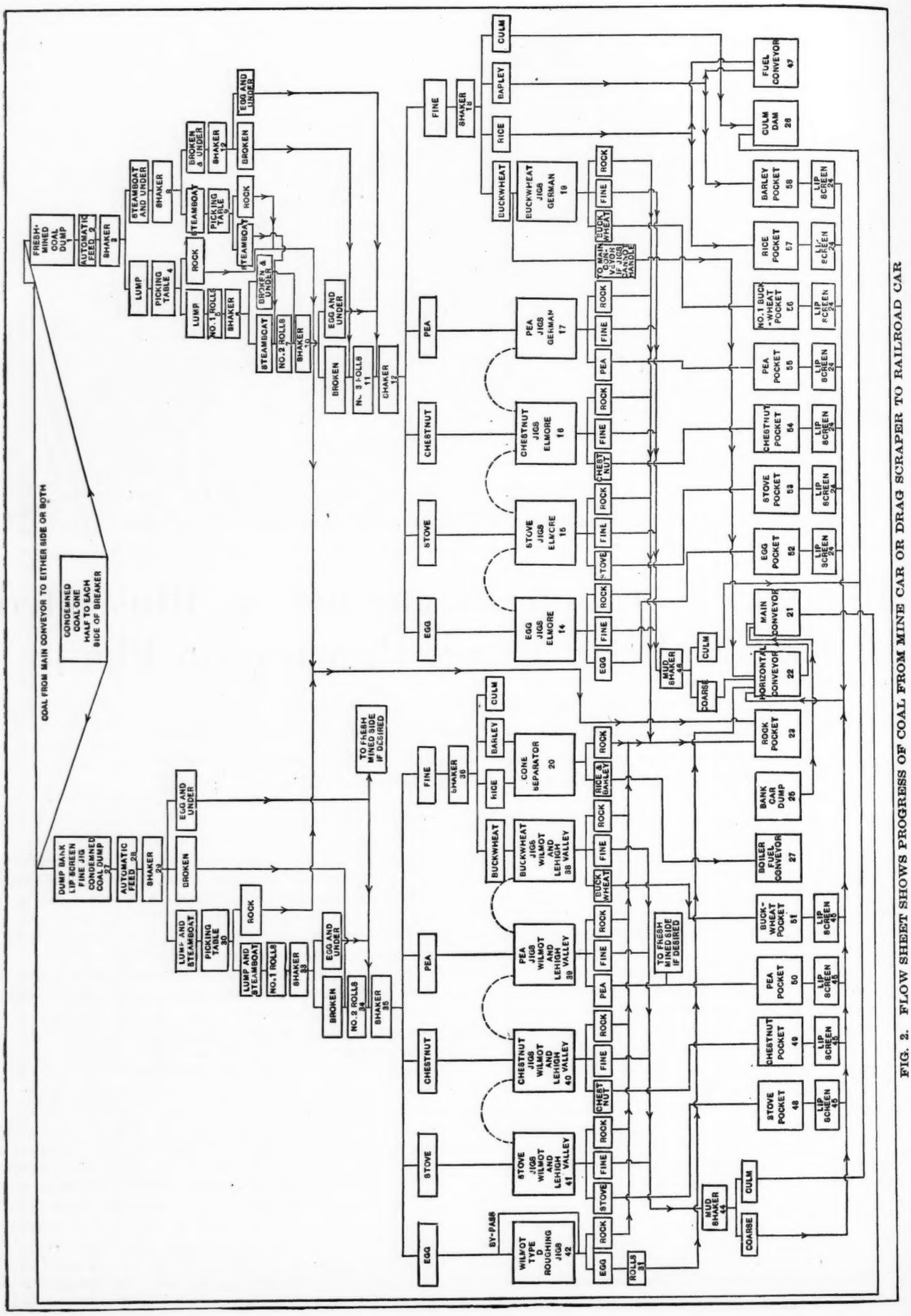
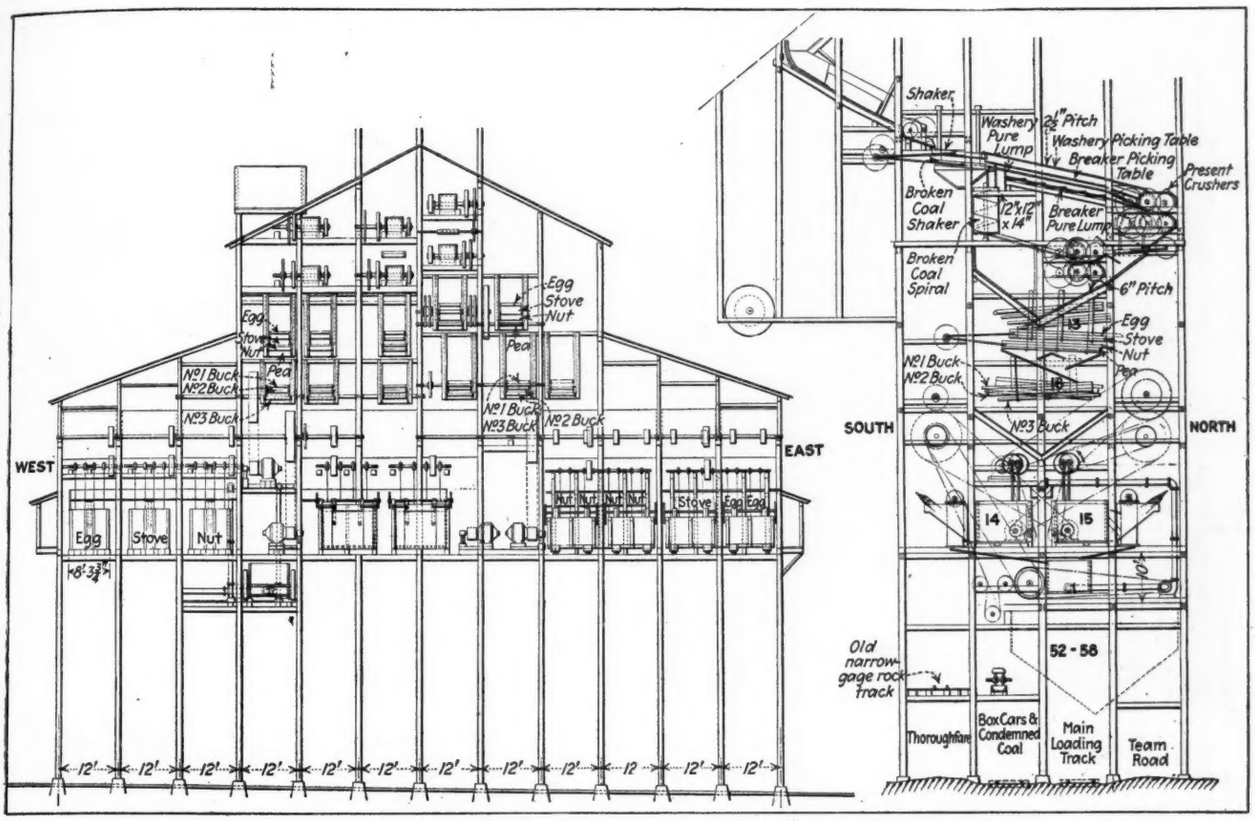


FIG. 2. FLOW SHEET SHOWS PROGRESS OF COAL FROM MINE CAR OR DRAG SCRAPER TO RAILROAD CAR



FIGS. 3 AND 4. TWO ELEVATIONS OF CRANBERRY CREEK BREAKER BEFORE ROLLS WERE CHANGED TO THE ARRANGEMENT SHOWN IN FIG. 5

Here are practically two breakers in one. On one side is the preparation machinery for coal from the culm banks. With this is treated the lip screenings of the railroad-car chutes and one-half of such coal as has been returned to the breaker for retreatment because it has not proved on inspection to be in accord with the standards. The coal thus treated contains little of the lump and steamboat sizes. It is possible therefore, without appreciable loss, to combine both when running them through the rolls. On the opposite side the lump and steamboat are separated, and the lump is first broken down before it goes to the rolls in which the steamboat is crushed. This complicates matters on the right side considerably. As will be noted, there are only two sets of rolls on the left side, whereas on the fresh-mined coal side there are three. Washing takes place as soon as the coal is reduced to egg-and-under. The domestic sizes with the buckwheat go to jigs. The rice and barley go to a cone separator. The culm goes to a culm dam to be handled at some later time. The other side of breaker handles the fresh-mined coal and half the condemned coal in a manner quite similar, but the rice and barley, being cleaner, are not washed.

such that either side can handle the coal normally prepared by the other. Arrangements are made at a number of points to permit this change to be made readily. Of course, in such a case it would be necessary to stop the preparation of one kind of coal and concentrate all efforts upon the preparation of the other. Thus there would be no possibility of the two varieties mixing.

In this article, in order that the process of preparation may be readily followed by the reader, index numbers are placed in the text, on the flow sheet, Fig. 2 and on the cross-sections, Figs. 3 and 4. The preparation accorded the freshly-mined coal will be considered first, to be followed later by a description of the treatment administered in the other parts of the breaker.

Where Possible Cushion Large by Fine Coal

Coal from the mine is dumped from the mine cars into a hopper (1) at the top of the breaker. From that point it is discharged by an automatic feeder (2) onto a shaker (3). This separates the lump from the remainder of the coal, the lump passing over the screen while the steamboat-and-under passes through. The superintendent of preparation believes in keeping the large coal cushioned as far as possible with the smaller sizes, so as to reduce the amount of breakage incurred. For this reason the coal is not separated at this point into all its different sizes. The lump next goes over a picking table (4), where the rock is separated from it and sent to the rock pocket (23) at the foot of the breaker.

Referring to Fig. 5 it will be noted that, wherever possible, coal chutes are curved so that breakage may be reduced to a minimum. The cleaned lump is fed to a set of No. 7 rolls (5), where it is crushed to steamboat-and-smaller. Coal from these rolls goes over a shaker (6), where the steamboat is separated from the broken-and-under.

The steamboat-and-smaller made on shaker 3 passes over another shaker (8), where the steamboat size is separated from the broken-and-under, and next passes over a picking table (9), where the rock is removed and sent to rock pocket (23).

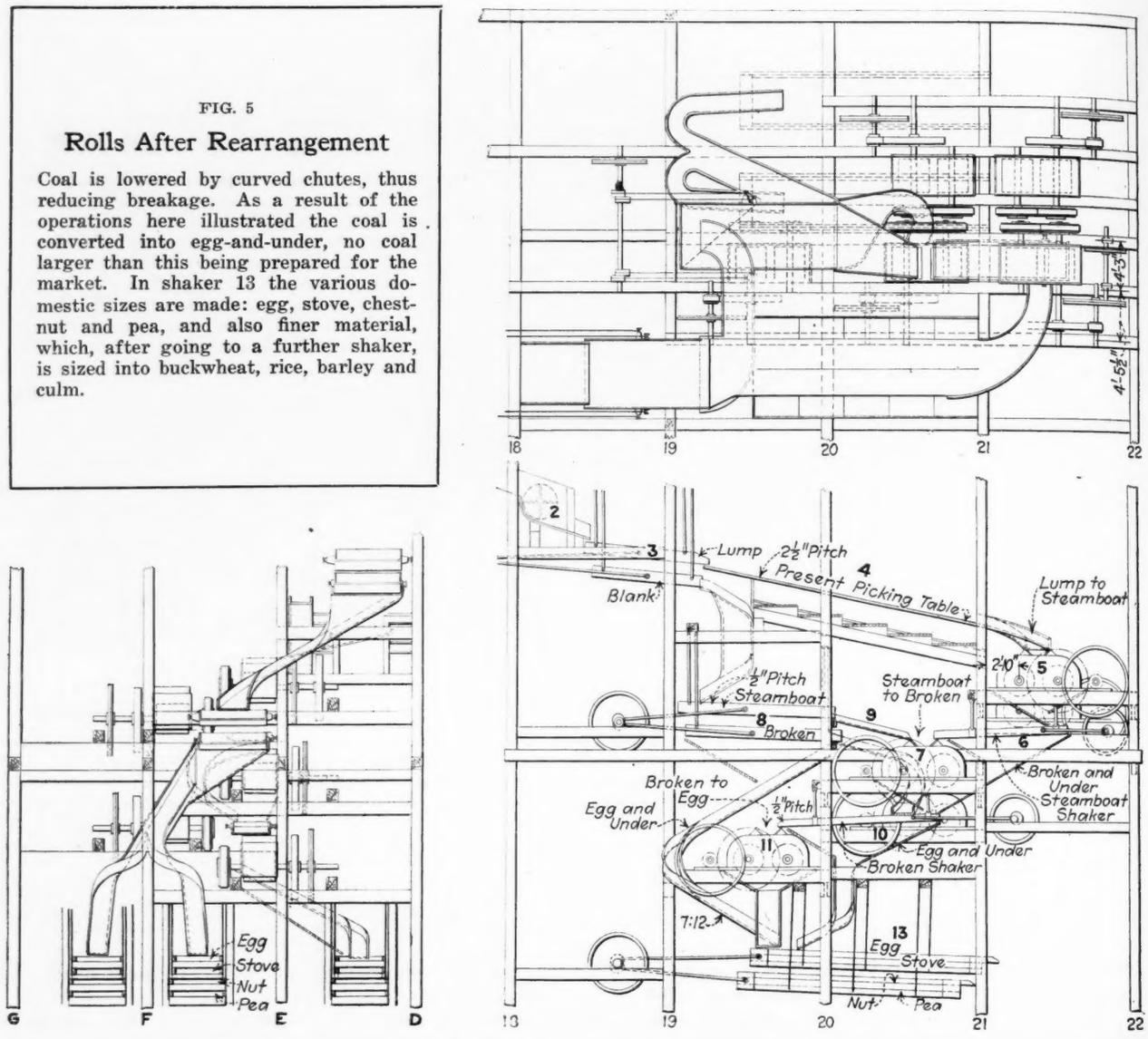
This steamboat coal, mixing with that from shaker 6, goes to a set of No. 2 rolls (7), and thence to a shaker (10), where it is separated into broken and egg-and-under. Now going back to the broken-and-under from shaker 8, this passes over another shaker (12), where the broken is separated from the egg-and-smaller. The broken from this shaker then unites with the same size of coal from shaker 10 and passes through a set of No. 3 rolls (11). The broken-and-under from shaker 6 is discharged onto shaker 10 and is there treated at the same time as the rest of the broken from rolls 7 is sized.

Thus all the coal has been reduced to egg-and-under and is ready for the final sizing and treatment. Consequently the coal from the set of No. 3 rolls (11) and

FIG. 5

Rolls After Rearrangement

Coal is lowered by curved chutes, thus reducing breakage. As a result of the operations here illustrated the coal is converted into egg-and-under, no coal larger than this being prepared for the market. In shaker 13 the various domestic sizes are made: egg, stove, chestnut and pea, and also finer material, which, after going to a further shaker, is sized into buckwheat, rice, barley and culm.



the egg-and-under from shakers 10 and 12 then pass to shaker 13, where five sizes are made: The egg coal from this shaker goes to Elmore jigs 14. The stove and chestnut coal from this shaker also go to Elmore jigs 15 and 16 respectively, while the pea coal passes to German jigs 17. The cleaned product from each of these jigs then passes to its proper pocket, and the fine and under-sized material goes to a mud shaker (46), where the coarse particles are removed from the culm. The coarse material then goes to the horizontal conveyor (2), while the fine stuff is discharged to the culm bank (26). This disposes of the domestic sizes, if pea can be included in that category.

Fine coal from shaker 13 goes to another shaker (18), which separates the buckwheat, rice barley and culm. The buckwheat passes to German buckwheat jigs (19) and thence to its pocket (56), while the fine material from this jig receives the same treatment as that from the other jigs already mentioned. The rock unites with the rock from the rest of the jigs and goes to its pocket (23).

Rice and barley from shaker 18 receive no further treatment and pass to their respective pockets (57 and 58) or to the fuel conveyor (47), to be loaded into small cars and hauled to the Harwood electric plant. Fine coal or culm that passes through the lower deck of shaker 18 goes to the culm dam (26). In case more buckwheat should be made than the jigs for this size can handle, arrangements are made to deliver this material to the horizontal conveyor (22). By this it is discharged to the main conveyor (21), which takes it back into the breaker on the bank-coal side for treatment.

Where Culm-Bank Coal Is Cleaned and Sized

Bank coal, lip-screen coal and the fine jig coal, are taken by the main conveyor (21) to the top of the breaker on the bank-coal side and discharged into a hopper (27). From that point it is fed by an automatic feeder (28) to a shaker (29), which separates the coal into lump-and-steamboat, broken, and egg-and-under. The lump-and-steamboat goes over a picking table (30), where the rock is removed and sent to the rock pocket (23). Coal from this picking table (30) passes through a set of No. 1 rolls and thence to a shaker (33), where the broken is separated from the egg-and-under. The broken coal sized on shaker 29 unites with that from shaker 33 and passes through a set of No. 2 rolls (34), the crushed product of which unites with that from shakers 33 and 29 and passes to shaker 35. At this

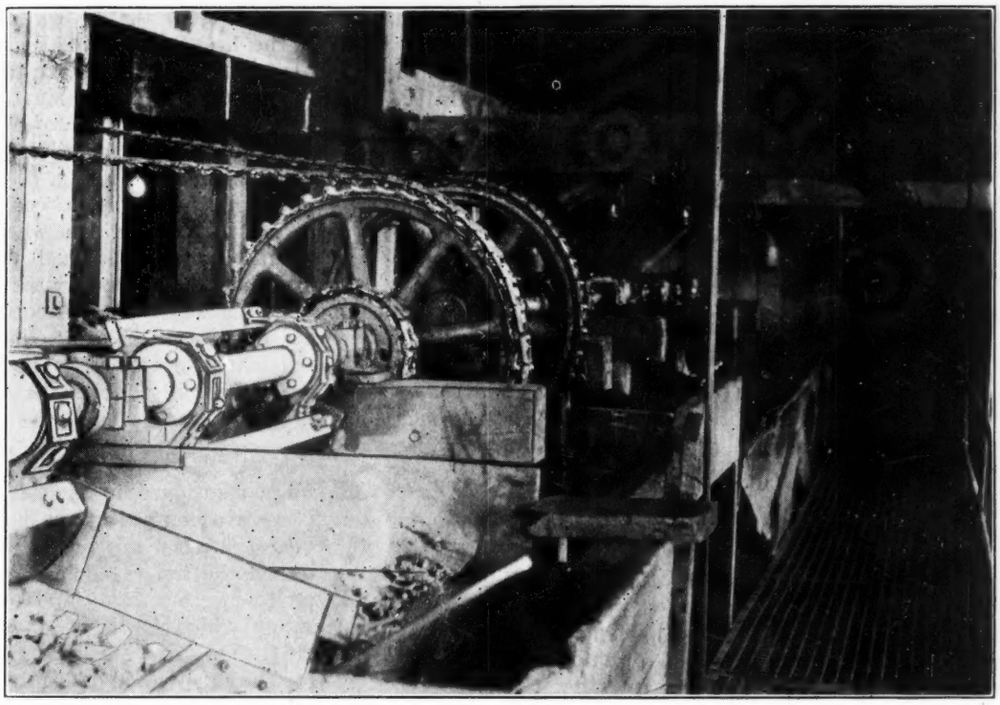


FIG. 6

Lehigh Valley Jig

On the culm-bank side of the breaker a steel floor with perforations is used, so that the jig attendant may watch the coal that passes from the jig, without having to descend to the lower deck.

point arrangements are made so that if necessary this coal can be sent to the freshly-mined side of the breaker for treatment.

EGG FROM BANK OFTEN RUNS THROUGH CRUSHER

Shaker 35 makes five sizes. The egg coal goes to a set of Wilmot type D roughing jigs (42) or is bypassed around them, going to a set of rolls (31), to be crushed to smaller sizes, as this size of coal from the bank makes a poor appearance on a car. From the rolls the coal goes to the horizontal conveyor (22), thence to the main conveyor (21) and back to the top of the breaker for retreatment.

Stove coal from shaker 35 goes to Wilmot and Lehigh Valley jigs (41). In order to reduce the number of men necessary to operate the jigs a walkway made of perforated sheet iron is installed, as may be seen in Fig. 6. This permits the men to watch the chutes as coal passes from the jigs and observe whether it is sufficiently clean. Fig. 7 shows the arrangement of the Wilmot jigs, where a raised platform permits the men to observe at close range the discharge from these machines.

Chestnut and pea likewise are jigged (39 and 40). Fine coal from shaker 35 goes to another shaker (36). The buckwheat from this screen is treated in Wilmot and Lehigh Valley jigs (38). The rice and barley unite and go to cone separator (20), whence they pass to the boiler-

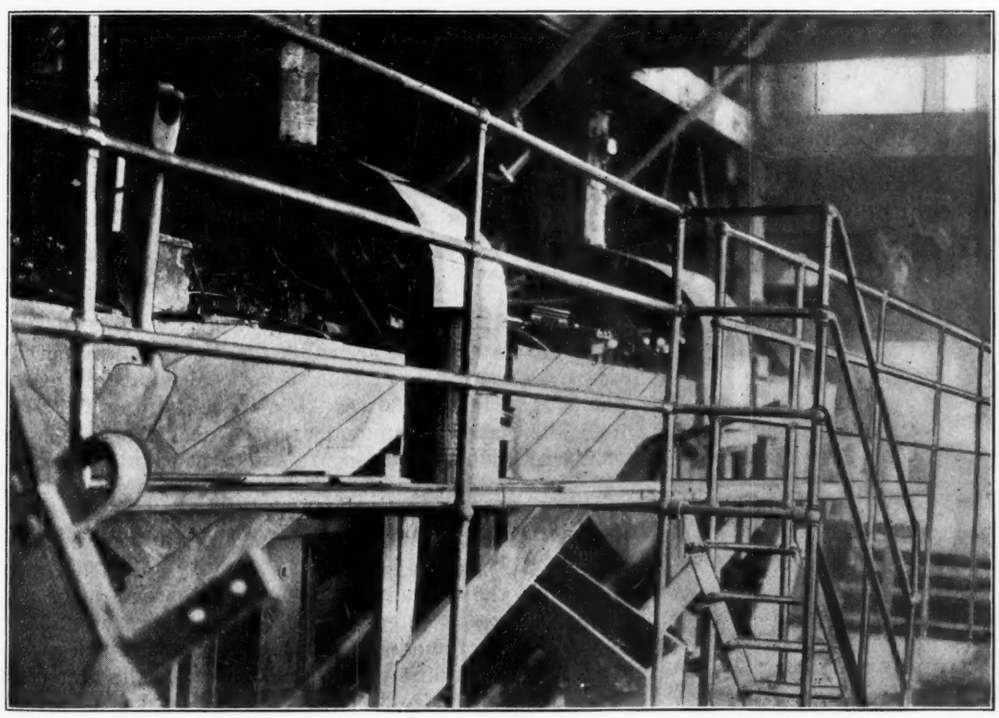


FIG. 7

Wilmot Jigs

A raised platform enables the men to view the discharge of the machines at close range. These jigs are used interchangeably with Lehigh Valley jigs for stove, chestnut, pea and buckwheat.

fuel conveyor (27) to be eventually sent to the Harwood Electric Co. plant.

Fine coal from the jigs unites and goes to a mud shaker (44), where the coarse material is separated, going to the horizontal conveyor (22), while the culm passes to the culm dam (26). Arrangements are such that the pea coal, if it is so desired, can be sent to the freshly-mined side for treatment there instead of on the bank-coal side of the breaker. Undersized material from the lip screens on both sides of the breaker is delivered to the horizontal conveyor (22) and starts backward through the building for resizing.

Jigs Made Interchangeable as to Coal Size

As far as possible the jigs are so arranged as to be interchangeable; thus in case there should be too much coal of one size and a shortage of coal of another size some of the material of which there is too much can be sent for treatment to another jig, which ordinarily would be idle because of the dearth of coal of its grade.

Fig. 8 shows the main conveyor taking coal to the top of the breaker from the bank bin seen in the left foreground. The horizontal conveyor, the end of which may be seen in the illustration, brings the undersized material from the breaker and discharges it into this bin, so that the main conveyor may transfer it to the top of the building.

When a carload of coal is condemned and returned to the breaker, it is dumped into one side of this bin and taken by the main conveyor to the top of the breaker for retreatment. Such coal is dumped only during the noon hour or after the day's run. When it reaches the top of the breaker one-half is sent down the freshly-mined side and the other down the bank-coal side. This saves much time in retreatment.

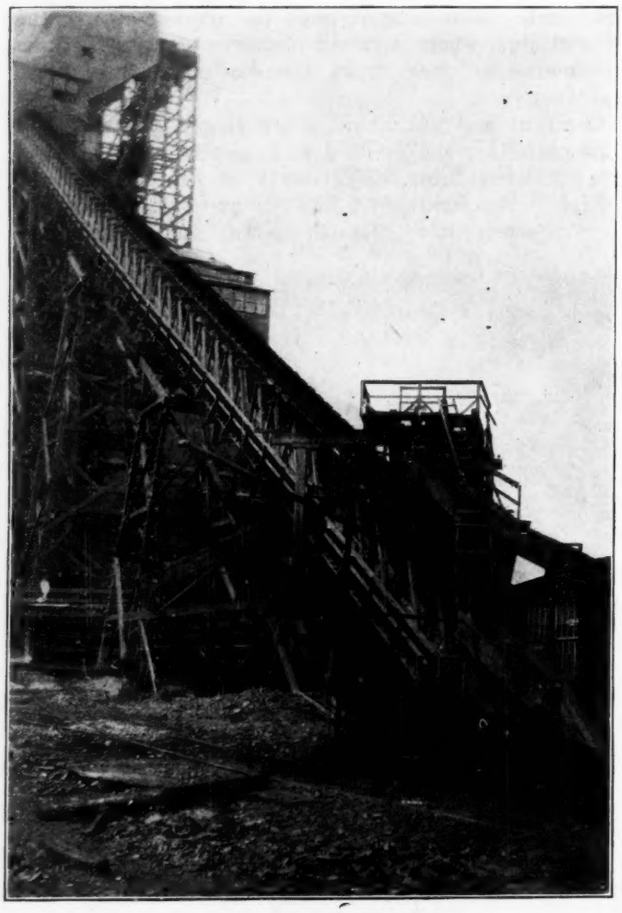


FIG. 8. MAIN DRAGLINE SCRAPER
Carries the culm-bank coal from the bin in the right foreground to the top of the breaker.

Prepared coal is loaded into railroad cars and weighed on a Fairbanks scale, the building in which the weighing is done being shown in Fig. 9. The scale is of ample size to handle the largest of coal cars, being capable of accommodating a car with a wheelbase of 50 ft. It has been found that it does not pay to accept the tare weights stenciled on the cars, as these may be incorrect as much as a whole ton. Accordingly all cars are now weighed empty. In the immediate rear of the scale is the coal inspector's office, while in the distance at the extreme left in Fig. 8 may be seen the miners' washhouse.

Would Reduce Breakage at Breaker Dump

As was mentioned in the early part of this article, mine cars are dumped at the head of the breaker. In this operation they are pulled up the plane, and when they reach the top the doors are opened and the coal allowed to run out into a pocket—really a chute—the bottom of which is about 4 ft. below the rail (see Fig. 10). This drop causes appreciable breakage. A test for the purpose of determining the amount of this breakage was conducted some time ago, with the results shown below.

A mine car of Wharton coal from No. 6 opening was sized over standard mesh and weighed. The material was then replaced in the car, care being taken to avoid breakage and to mix the large and small sizes as intimately as they were combined when they came from the mine. The chutes at the dump were thoroughly cleaned and swept. The car was hoisted and discharged by the regular crew and in the ordinary manner. The chutes were then again cleaned and the material sized and weighed as before. Table I shows the results obtained:

TABLE I. SIZE OF COAL BEFORE AND AFTER DUMPING

	Before Dumping		After Dumping	
Size	Weight Lb.	Percentage	Weight Lb.	Percentage
Lump	2,659	34.5	1,965	25.5
Steamboat	1,570	20.4	1,564	20.3
Broken	938	12.1	964	12.5
Egg	523	6.8	604	7.8
Stove	390	5.1	410	5.3
Chestnut	427	5.5	508	6.6
Total Prepared Sizes	6,507	84.4	6,015	78.1
Pea, No. 1 Buckwheat, Rice, Barley	884	11.5	1,126	14.6
Slush	315	4.1	550	7.1
	1,199	15.6	1,676	
Grand total	7,706	100.0		
Loss down the plane			15	0.2
			7,706	100.0

From this it will be seen that the loss in the prepared sizes was about 6.3 per cent. The total number of cars dumped during 1918 was 157,779 containing 549,071 tons. The average amount of refuse for the year was 12.28 per cent. According to the above data, the tons reduced from prepared sizes to smaller during this period was 34,041.4, and allowing for the refuse there was a total of 29,906 tons of marketable coal reduced in size.

During the year in question the average price of prepared sizes from egg to chestnut inclusive was $6.80 per ton, while the average price of the smaller sizes was $4.18, making a difference of $2.62 between the prepared and the smaller sizes. This, therefore, makes a loss of

FIG. 9

Weigh Scale

Scale and coal inspector's house at Cranberry breaker. Empty cars are carefully weighed, as the tare weight is often much as one ton incorrect. The scale will accommodate cars with a 50 ft. wheelbase.

$78,353.72 arising from the reduction in domestic sizes of the coal in a year's time.

Besides this there is another and even greater loss due to the increase in the amount of culm produced. This increased 3.3 per cent, which amounts to 18,119 tons in a year's time. As the average price of all sizes of coal was $5.49, this loss amounted to $99,473.31 for the year. In addition to these losses there was another loss due to coal running down the plane. This amounted to 0.2 per cent, or 315.6 cars per year, at a cost of 75c. per ton for reloading, which is equivalent to $237.70 for the year.

From these data the following statement is prepared:

Loss due to breakage of larger to smaller sizes	$78,353.72
Loss due to breakage of all sizes to culm	99,473.31
Loss down the plane	237.70
Total	$178,064.73

The entire test was made under conditions as nearly standard as possible. This test made it clearly apparent what advantages might be expected from the introduction of a dragline scraper for transporting the coal from the surface to the top of the breaker. The company accordingly has decided to install one, and it will handle all the coal that now moves up the right-hand tracks shown in Fig. 1.

Experiment on Preferable Roll Adjustment

The original breaker had an entirely different arrangement inside; in fact the preparation was wholly different. It was of the dry type and used ninety-six anthracite spiral pickers. These have been entirely done away with and the preparation is now strictly a wet one. The last main change that the Cranberry Creek Coal Co. made was to alter the arrangement of the rolls at the top. Figs. 3 and 4 show the arrangement previous to the last change, while Fig. 5 shows the present layout.

In order to determine the proper setting or adjustment of the rolls, tests are frequently conducted, so that if the rolls are not set properly this defect can be corrected and the maximum percentage of prepared sizes be obtained. I have been fortunate in obtaining a record of one of these tests, and a description of it follows.

The object of the test was to determine the setting of rolls necessary to give the largest percentage of prepared sizes as well as to divide the work of crushing equally between the three sets of rolls. A sample of 1,000 lb. of average quality and size of lump coal was treated. The chutes and rolls were cleaned before and after making the test. The sample was fed into the rolls at ordinary speed, being put, as usual through No. 1 rolls first.

These rolls had a speed of 33 r.p.m. Their setting was 42¾ in. from center to center. The height of tooth was 4 in. and the diameter of the rolls 33 in. The teeth were Johnson hollow ground, and were fairly sharp. They were staggered in both directions. The results,

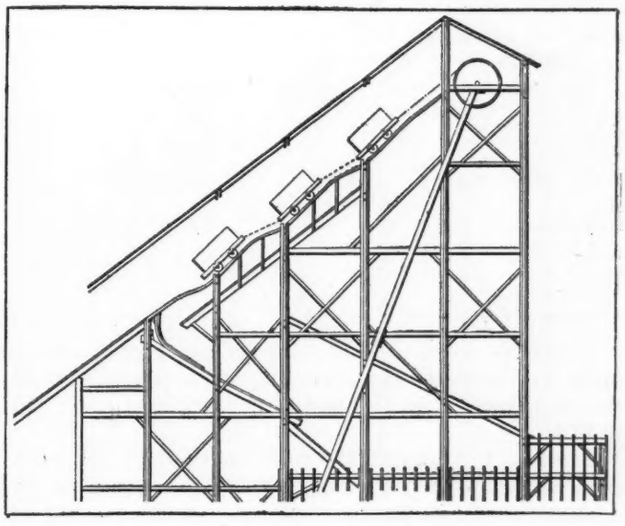


FIG. 10. THIS METHOD OF DUMPING CAUSES MUCH DEGRADATION

To cut out this loss a dragline scraper is to be installed. As it is, the coal drops 4 ft. to the chute. The loss on this small item is about $180,000 a year. This suggests what a profit can be made by eliminating this and other like rough handling of coal.

after running the coal through the first roll, were as in Table II.

TABLE II. SIZES OBTAINED AFTER PASSING LUMP THROUGH NO. 1 ROLLS

Size	Weight, Lb.	Percentage	Mesh Used
Steamboat	548	54.8	4½ in. round
Broken	185	18.5	3½ in. round
Egg	79	7.9	2 1/16 in. round
Stove	50	5.0	1¼ in. round
Chestnut	49	4.9	¾ in. round
Total domestic size	911	91.1	
Pea	29	2.9	5/16 in. round
Buckwheat	22	2.2	5/16 in. round
Rice	16	1.6	5/16 in. round
Barley	13	1.3	5/16 in. round
Smaller	7	0.7	
Lost	2	0.2	
Total below domestic sizes	89	8.9	

The 548 lb. of steamboat coal that was made on the No. 1 rolls was then run through the No. 2 rolls. The same method was used as in testing the other machine. The speed of these rolls was the same as in the first case, but the teeth were only 2¼ in. high. The rolls were set on 41¼-in. centers. Otherwise they were like the No. 1 rolls. The results obtained from running this coal through the rolls and screening it on the same kind of screens were as in Table III.

TABLE III. SIZES OBTAINED AFTER PASSING STEAMBOAT FROM NO. 1 ROLLS THROUGH NO. 2 ROLLS

Size	Weight, Lb.	Percentage	Mesh Used
Steamboat	10	1.8	4½ in. round
Broken	258	47.0	3½ in. round
Egg	150	27.4	2 1/16 in. round
Stove	48	8.7	1¼ in. round
Chestnut	35	6.4	¾ in. round
Total domestic sizes	501	91.3	Former result 82 per cent
Pea	15	2.7	5/16 in. round
Buckwheat	14	2.6	5/16 in. round
Rice	9	1.6	5/16 in. round
Barley	5	1.0	5/16 in. round
Smaller	2	0.4	
Lost	2	0.4	
Total below domestic sizes	47	8.7	

Through the No. 3 rolls the 10 lb. of steamboat and the 443 lb. of broken was passed, making a total of 453 lb. This was the same material that was put through the No. 1 and 2 rolls. The same method was followed as has been described. The teeth were the same height as those on the No. 2 rolls, but the setting was on 40¾ in. centers. The results obtained on screening over the same kind of screens were as in Table IV.

TABLE IV. SIZES OBTAINED AFTER PASSING STEAMBOAT AND BROKEN FROM NO. 2 ROLLS THROUGH NO. 3 ROLLS

Size	Weight, Lb.	Percentage	Mesh Used
Broken	101	22.3	4½ in. round
Egg	184	40.6	3½ in. round
Stove	91	20.1	2 1/16 in. round
Chestnut	39	8.6	¾ in. round
Total domestic sizes	415	91.6	Former result 91.1 per cent
Pea	12	2.6	5/16 in. round
Buckwheat	9	2.0	5/16 in. round
Rice	6	1.3	5/16 in. round
Barley	4½	1.0	5/16 in. round
Smaller	4½	1.0	
Lost	2	5	
Total below domestic sizes	38	8.4	

As will be noted in Tables III and IV, proper adjustment had increased the percentage of prepared sizes in the case from 82 to 91.3 and in another case from 91.1 to 91.6.

Previous to resetting the rolls for this test a similar trial has shown a percentage of 79.3 per cent for the domestic sizes, so that an increase in the amount of these grades amounting to 3.3 per cent was made by the change. This gain in a year's time would amount to an appreciable sum in dollars and cents. This shows how carefully the conditions under which coal is prepared should be watched and tested. Continual experimentation is required in order that the best results shall be obtained.

This company has a superintendent of preparation who is continually trying out new devices in order to determine what will give the best results. At his request a Deister-Overstrom coal-washing table has just been purchased, so that experiment with it may be conducted in order to determine whether or not the best possible results are being obtained.

TABLE V. SIZES OBTAINED FROM THE THREE OPERATIONS

Size	Weight, Lb.	Percentage	Mesh Used
Broken	101	10.1	4½ in. round
Egg	413	41.3	3½ in. round
Stove	189	18.9	2 1/16 in. round
Chestnut	123	12.3	¾ in. round
Total domestic sizes	826	82.6	Former results 79.3 per cent
Pea	56	5.6	5/16 in. round
Buckwheat	45	4.5	5/16 in. round
Rice	31	3.1	5/16 in. round
Barley	22½	2.3	5/16 in. round
Smaller	13½	1.3	
Lost	6	0.6	
Total below domestic sizes	174	17.4	

The drive at this breaker is exclusively electrical and is controlled from a central point, as at the No. 11 breaker of the Lehigh Coal & Navigation Co. and the Kaska breaker of the Alliance Coal Mining Co., already described. The advantages procured by this arrangement, particularly in respect to safety, are obvious.

Cuts a Thousand Tons in Eight Hours

By Andrew Lecorchick*
Uniontown, Pa.

A RATHER interesting chain-machine performance was recently noted at the Leckrone No. 1 mine of the H. C. Frick Coke Co. In starting to draw the ribs in a certain section of this mine, according to the system usually followed in the Frick field, it was found advisable to make a long slabbing cut on a barrier pillar, the length of the slab to be cut being 504 face feet. One of the CE-7 Sullivan "Ironclad" machines used in this mine was selected for the work.

This machine reached the section and started the sumping cut at 4 p.m., in charge of Frank Gearing, assistant mine foreman, two machine men and a crew of five timbermen. This timber crew was necessary as ninety-one posts had to be removed, one at a time, and reset after the machine had passed. I was present during the entire cut, took observations and made the measurements and calculations.

The machine was equipped with a 7 ft. 6 in. cutter bar and it was necessary to stop the cutting nine times in order to reset cutters, a total of 278 bits being used on the slab. Owing to the fact that the Sullivan machine employs a feed chain that passes through the machine continuously, it was possible to use a chain 115 ft. in length, so that it was necessary to reset chain only four times in making the entire cut. Four spars or clay veins were encountered and cut. The data covering the cut are as follows:

Machine started sumping at	4:00 p.m.
Machine finished slab cut at	11:40 p.m.
Total over-all time	7 hr., 40 min.
Total length of cut	504 ft.
Average depth of cut	6.84 ft.
Average height of coal	6.08 ft.
Area of undercut	3,447 sq.ft.
Area of undercut per minute, based on over-all time	7.49 sq.ft.

The above cut yielded 587 standard Frick cars of 45 bu. capacity, making a total of 26,415 bu., which is equivalent to approximately 1,003 short tons.

*Mining machine inspector, H. C. Frick Coke Co.

Rebuilding Burned Tipple with a Minimum Loss of Plant-Operating Time

A Steel Headframe and a Temporary Wood Tipple with Bar Screens Were Erected and Operated Within Sixty Days After Signing of Contract—Permanent Modern Fireproof Tipple Was Then Constructed with but Slight Delay to Operation

By R. T. Middleton,
Chicago, Ill.

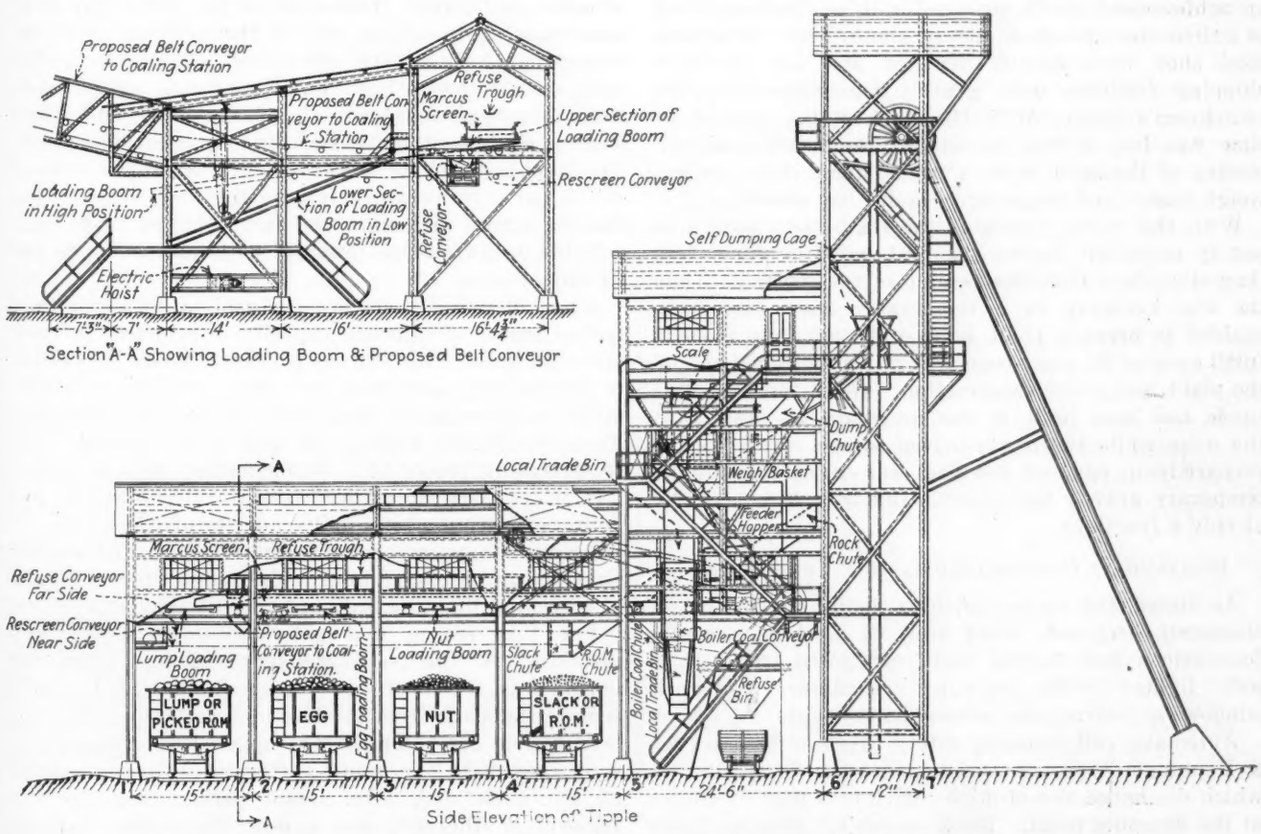
At the mine of the Jackson Coal Co. at Hallidayboro, Ill., about fifteen miles due north of Carbondale on the main line of the Illinois Central R.R., can be found one of the most modern and efficient coal tipples in the Central Coal Field. The original shaft equipment at this mine, which is undoubtedly one of the oldest in the state, consisted of an old wooden headframe, a shaker-screen tipple, platform cages and turnover dump. Solid-body mine cars were employed.

This wooden structure, with its accompanying shops, storehouses and equipment, was totally destroyed by a fire of unknown origin on the night of April 1, 1920, causing a loss of approximately $60,000. It was the desire of the coal company to rebuild as quickly as possible in order to participate as far as possible in the season's business. At the same time the company desired to replace the combustible tipple and relatively antiquated equipment with a tipple of fireproof construction and with equipment which would permit of economical and efficient preparation of the coal.

In consequence a permanent steel headframe, with self-dumping cages, scales and a weigh basket, was planned, a wooden structure with a temporary gravity bar screen, permitting of the preparation of 1¼-in. lump and slack, being meanwhile erected to make possible the immediate operation of the mine.

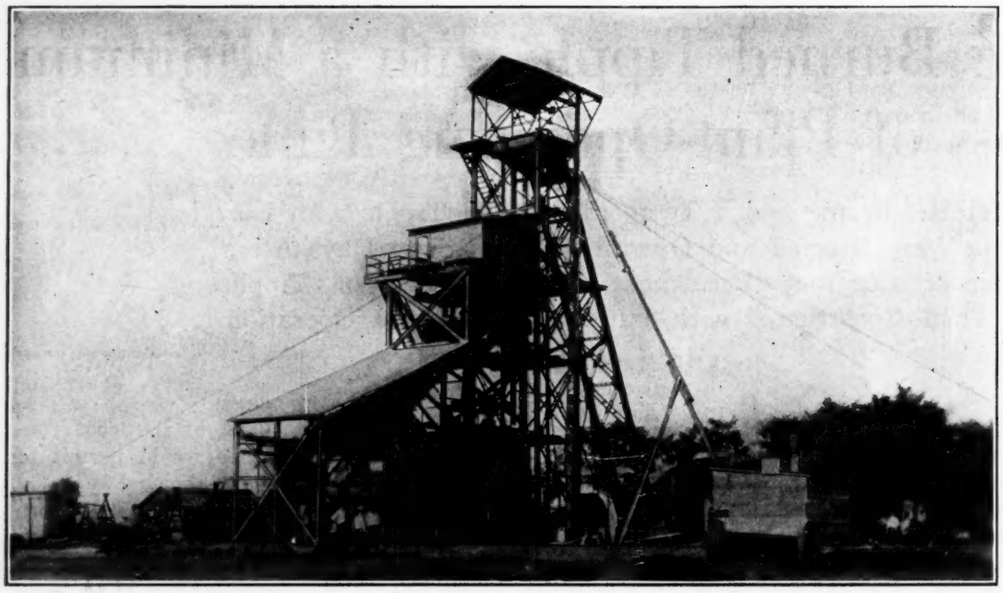
Dumping Coal in Less Than Sixty Days

On April 7, one week after the fire occurred, the contract for the new tipple was signed, and two days later orders were placed with the various shops for the hoisting rope, hoist sheaves, self-dumping cages, weigh basket, scales, etc., and work on the fabrication of a 45-ton structural steel headframe was begun. While



TIPPLE OF JACKSON COAL CO. AT HALLIDAYBORO, ILL., IS ELECTRICALLY OPERATED THROUGHOUT

Two-ton cars are hoisted in a steel headframe. They dump automatically into a weigh basket, which dumps forward or backward, as desired. Dumped forward the coal goes to a local-trade chute or to a special chute which is used only when, in an emergency, the screens have to be shut down. Dumped backward the coal goes to a double-decked shaking screen, by which the coal is screened into slack, nut, egg and lump and is passed by way of shaker loading booms to the appropriate railroad cars. Arrangements are made also for rescreening.



Tipple on July 1

Contract was let April 7. On May 14 the structural steel arrived. The temporary screening and loading plant was completed on the first week in June. When the photo from which this illustration was made was taken much progress had been made toward completion of the permanent plant.

this work was rapidly progressing in the shops the débris caused by the fire was being cleared away and the site prepared for the new foundations.

On April 25 the concrete shaft collar and tower foundations were completed, and while awaiting the arrival of the structural steel the temporary wooden structure for supporting the gravity bar screen was framed. About three weeks later—on May 14, just thirty-four days from the placing of the order—the structural steel arrived on the job. This in itself was an achievement worth noting, for it was accomplished at a time when the stock piles of almost every structural steel shop were greatly depleted and the country's shipping facilities were gravely handicapped by the switchmen's strike. With the steel on the ground no time was lost in the erection of the headframe, the placing of the head sheaves, cages, dump chute, scales, weigh basket and temporary gravity bar screen.

With this work completed the temporary plant was put in operation during the first week in June—less than sixty days from the signing of the contract. Thus the coal company in a remarkably short time was enabled to prepare 1¼-in. lump and slack, and thereby fulfill some of its many contracts, while the remainder of the plant was under construction. When the new steel tipple had been built it was necessary to shut down the mine while the power-driven screen which was to prepare lump, egg, nut and slack was substituted for the temporary gravity bar screen. But this delay was one of only a few days.

Building as Constructed Is Non-Combustible

As stated, the entire tipple as finally constructed is absolutely fireproof, being built of steel on concrete foundations and covered with corrugated iron. It is well lighted with top-hung ventilator, steel-sash windows and corrugated wire-glass skylights.

Automatic self-dumping safety cages of the Herzler & Henninger type are used to hoist the 2-ton pit cars which discharge run-of-mine coal into a pair of chutes at the dumping point. These chutes are designed with a minimum slope, permitting an easy flow of coal to a two-way bottom-dump weigh basket which is hung from a 15-ton standard suspension scale provided with a quick-reading dial and a beam box conveniently arranged in the weigh room for recording the weight of each dump. The door of this weigh basket is operated by two sets of gravity brake bands, allowing it to open either forward or backward at the will of the operator stationed in the weigh room.

Can Deliver Mine-Run Direct to Tracks

When dumping forward the coal is delivered to a steel transfer chute provided with a centrally-pivoted flap gate operated from the weigh-room floor by means of levers and ropes. This delivers the coal either to a local-trade chute on one side of the building or to an emergency chute on the other side. The latter chute makes it possible to load run-of-mine coal on the slack track, should a shutdown of the screening and other loading equipment make such an expedient necessary. The local-trade chute is conveniently arranged with a set of bar screens which remove the finer sizes to the Marcus screen and allow the larger lumps to go into a 20-ton local-trade bin provided with undercut gate for loading wagons.

When dumping backward the coal is delivered to a feeder hopper of sufficient capacity to hold two or more mine-car loads. This storage provision makes it possible to operate the cages when the screen and loading equipment are momentarily shut down for docking purposes. From the feeder hopper the coal is discharged by a reciprocating feeder to a double-decked Marcus screen 7 ft. wide. The rate of feed is uniform at 360 tons per hour, permitting a total daily capacity of 2,500 tons.

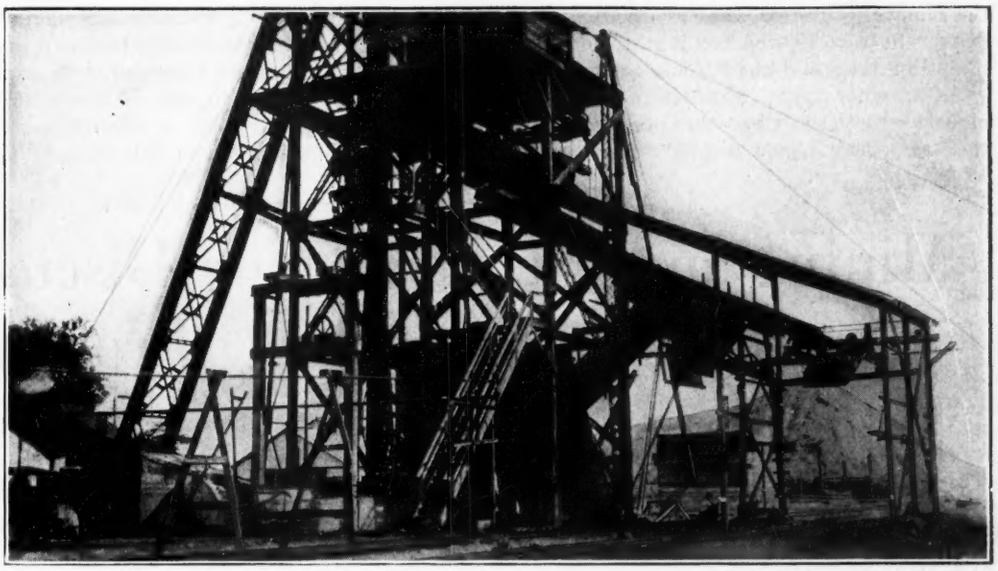
As impurities exist in this coal, chiefly in the smaller sizes, it was necessary to provide a more efficient means of screening than the ordinary type of shaker provides.

For this reason a two-deck Marcus screen was installed. At the feeder delivery end just above the upper deck a set of bar screens is provided, which remove the slack from the larger sizes before the slack perforations are reached. The upper deck of the screen is provided with 2-in. round perforations for the passing of the slack coal, 3-in. round perforations for the removal of the nut, and a 6-in. bar screen for the removal of the egg. Between the slack and nut and the nut and egg perforations blank areas are provided for inspecting and picking the coal.

Slack, removed through the slack perforations, passes

Temporary Plant

Gravity bar screens were used to size the coal while the new structure was built around the temporary one. No temporary shaft structure was erected. This part of the equipment had to be constructed permanently before any coal could be loaded.



along the bottom deck to its gate opening and thence by means of an end-loading chute goes to the railroad cars. Likewise the picked nut, egg and lump pass through their respective perforations and along the bottom deck through their gate openings to shaker loading booms, by which they are carefully loaded into railroad cars. The booms are raised and lowered by means of electric hoists. In case picked run of mine is desired all the gates of the screen are closed, and the slack, nut and egg, after passing through their perforations, move along the bottom deck to the front of the screen, where the mixture unites with the lump and is loaded as picked run of mine over the lump boom.

In addition to providing an easy descent and perfect trimming of the car, this type of boom assures a high-class product because of its ability to rescreen what little degradation may be caused by the slight fall from the screen to the boom, and also by its ability to permit of picking on the upper section. The rescreenings from the booms are delivered by shaking chutes attached to them to one compartment of a double drag conveyor hung under the screen-house floor.

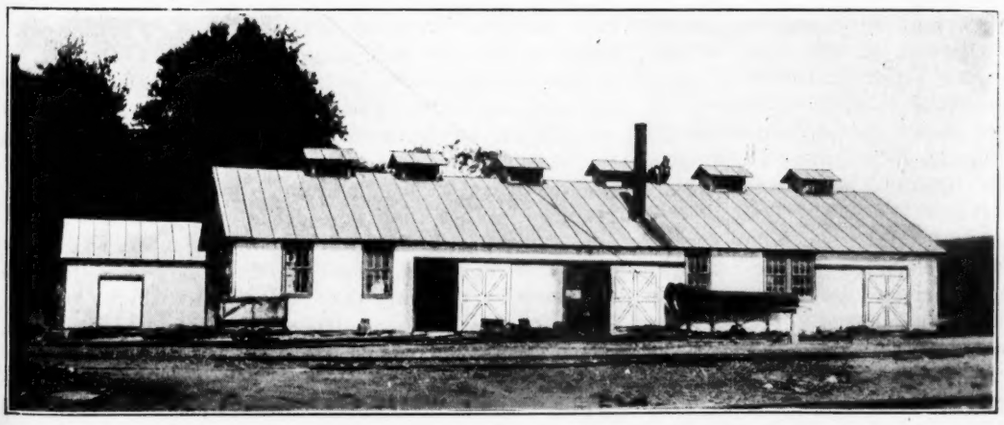
Boilers Are Fed With Rescreen Slack

This in turn conveys them to a boiler conveyor, delivering them for use as fuel under the boilers. When the rescreenings from the booms are insufficient in quantity to supply the boilers, slack may be obtained direct from the screen by opening a slide gate in the screen bottom and diverting the coal by means of a steel chute to the boiler-fuel conveyor.

Above the Marcus screen and attached thereto is a refuse trough on which are thrown the pickings from the screen. This trough has the same motion as the screen, and the pickings are carried forward on it and to the side of the screen to a refuse chute, which delivers them to the other compartment of the above-mentioned double drag conveyor. This in turn conveys them, together with the pickings from the booms, back beyond the slack track to a refuse bin under the Marcus pier, from which they are carried away by means of a rock car.

During a day's run a dozen or so cars of mine rock are brought to the surface, and provision is made for disposing of them by means of a set of flap gates in the dump chutes. When these gates are opened the mine rock is diverted to a steel chute, which delivers it to a reinforced-concrete rock bin located on one side of the tipple. From this point the material is removed to the rock dump by means of the car that serves the refuse or pickings bin.

Provision has been made for the rescreening of the smaller sizes of coal. To this end a set of slide gates is provided in the bottom of the Marcus screen just beyond the slack track for the purpose of removing the slack to a belt conveyor which will deliver this material to a rescreening plant located over the slack track. Likewise, as shown in the illustration, provision has been made for



New Shops

Corrugated sheet-iron siding shops replace the old wooden structures. The Jackson Coal Co. has decided that one fire is enough and to spare, and that only an all-steel building gives complete insurance.

the removal of the egg coal to a belt conveyor which will deliver it to a 300-ton coaling station located over the main-line tracks of the Illinois Central.

As a whole this installation represents the most modern practice in tipple and plant construction. It and the temporary tipple erected after the fire were constructed by Roberts & Schaefer, of Chicago. All equipment is electrically operated and easily maintained, and all units are arranged with a view to economy in design as well as to ease of accessibility. James Scott is general manager of the property and W. D. George is superintendent of the mines.

Mining and Electrical Men Discuss Power Rates and Gathering Problems

Demand Charges Versus Differential Rates—Motor Overload Causes Expensive Repairs but Is Preferable to Loss Sustained by Continuous Underload—Kingsland Advocates Private Power Plants—Big Cars Cut Gathering Costs.

THE first combined meeting of the Pittsburgh Sections of the American Institute of Electrical Engineers and the American Institute of Mining and Metallurgical Engineers was held in the Bureau of Mines Auditorium in the afternoon and evening of Jan. 21. Approximately one hundred members of both societies were in attendance at the double session and attended the dinner which also was held in the Bureau Building. The program has been arranged by Graham Bright, of the Westinghouse Electric & Manufacturing Co.

The paper of F. W. C. Bailey, consulting engineer, of Columbus, Ohio, on "Rates for Electrical Energy and Service," was read by A. B. Kiser, of the Pittsburgh Coal Co. As the electrical members present were already more or less familiar with power schedules, Mr. Bailey's paper perhaps was more interesting to the mining men than to the electricians.

"It is almost as impossible," contended Mr. Bailey, "to frame a power rate that is fair for each consumer, as it is for a life-insurance company to name a fair rate—based on cost—for each risk that it assumes. Rates are necessarily based upon classifications, diversity factors and averages as well as costs of production. When the entire output is taken by one consumer, a fair rate is a simple matter, but when thousands of consumers, distributed over a hundred or more square miles of territory, are served under all sorts of conditions, then the preparation of equitable rate schedules is quite another matter.

Complicated Schedules Breed Distrust

"An ideal schedule, especially for small consumers, would be one so simple that the service could be purchased as easily as groceries. Unfortunately most power schedules, even those available to small users, are so bewildering to the layman that they frequently breed a distrust of their fairness, and it is among the smaller users that 'conscientious objectors' are most generally found.

"Most large power-company rate schedules specify both a demand and an energy charge, but the same gross receipts can be assured at various load factors without the levying of a separate demand charge, for a relatively high rate may be assessed for the primary block of energy used and a low rate for the secondary or tertiary blocks. An example of this method is afforded by 'Schedule J' of the West Penn Power Co. This schedule provides a charge of 6c. gross per kilowatt-hour for the first seventy hours of use and 1½c. gross per kilowatt-hour for all energy in excess of the first seventy hours use, with block discounts of from 2½ to 43 per cent."

Purchased Power Cheapest of Commodities

I. W. Jenks, of the West Penn Power Co., declared that the cost of purchased power has risen less than that of any other commodity that could be named, and asserted that the service of the power companies had much improved in the last few years. In his opinion, many who complained of the costs had never operated power plants themselves and so had no idea as to what was a proper charge for such a service. He then cited a case where an operator decided to make his own power by utilizing the coal in the culm piles that had accumulated at his mine. By the time the operator had installed the machinery necessary for the salvaging of the high-ash coal he learned that his product was costing him $5.50 a ton, whereas he was receiving but $3.50 for the coal that he was loading at the tipple. Yet this operator could not be induced to purchase his power or use his own product, so firm was he in the mistaken conviction that by using a waste product he was effecting large economies.

Better Risk Overload Than Pay Big Bills

Mr. Jenks then stated that he believed real worthwhile economies at the mine could be realized by utilizing motors of appropriate horsepower. Few operators employ motors of the correct size. The common practice is to install a motor of much greater capacity than the need actually demands.

Even though, as a result of installing equipment of smaller capacities, the motors may be overloaded occasionally and burn out, it will be found much cheaper in the end to meet the repair bills resulting from that practice than to use habitually more energy than is required. More than passing interest attaches to Mr. Jenks' remarks. The tipple, perhaps more frequently than any other mine-plant building, houses motors all too large for the work they have to perform.

A. D. Dreyfus, consulting engineer, of Pittsburgh, urged the power companies to make an agreement as to the methods of rating. E. C. Stone, of the Duquesne Light Co., advocated that the "demand charge" be

adopted by all power companies as part of their rating system.

R. L. Kingsland, of the Consolidation Coal Co., then gave some figures to show that large companies could not afford to purchase their power if they had facilities at hand to manufacture it themselves. The Consolidation Coal Co. uses cleanings from the haulageways as fuel for the furnaces of its power plant, and it has learned that the cost of coal is two-thirds of the cost of power.

Savings in Power Cost Readily Made

At some operations the cost is 2½c. per kilowatt-hour while at others it is as high as 12c. The load factor when the mines were idle was, of course, low. During slow mine runs this factor was often as low as 34 per cent, but by running the pumping machinery at night it has been raised to 43 per cent on a 15-min. peak. When the mines are idle many methods of economy in operation can be adopted to reduce power cost, and these are open to all operators if they will adopt them.

At the close of the discussion of Mr. Bailey's paper the visitors were shown through the Bureau of Mines laboratories, where numerous demonstrations had been arranged. At 6:30 p.m. the members assembled for dinner in the cafeteria of the bureau. Mr. Dennison acted as toastmaster and called upon Charles Robbins, of the Westinghouse company, vice-president of the A. I. E. E., for extemporaneous remarks. Mr. Robbins responded by sketching the growth in the organization of the various engineering societies and describing how these had finally all been merged into a single organization known as the Federated Engineering Societies.

R. L. Kingsland then read the paper of the evening, "Gathering in Coal Mines." Mr. Kingsland's paper was a recital of what the Consolidation Coal Co. had learned about three general types of gathering locomotives—namely, crab-reel, cable-reel and combination—and how each fitted into the mining methods employed by that concern.

Another engineer who was in the audience supplemented Mr. Kingsland's remarks at the conclusion of the reading of the paper. This member maintained that storage-battery locomotives were not being operated as efficiently as they should be. For instance, in his region it had been learned that only locomotives of three main specifications could be utilized, by reason of the mining methods employed.

The thickness of the coal worked made it necessary that the over-all height of the locomotive should not exceed 30 in. The reel must be of simple and rugged construction, as the locomotives must traverse rooms 20 ft wide turned off on 40-ft. centers. Further, the wheelbase cannot be greater than 6 ft., because these machines must negotiate short-radius room-neck curves. He contended that his firm was today paying $25 for every seventy-five tons of coal gathered at the butt entry. Roughly, therefore, it was costing 33c. per ton to place the cars where the main haulageway locomotives could pick them up.

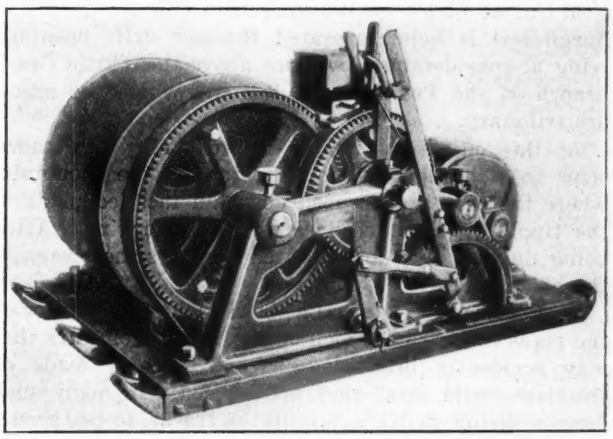
Mine Cars of Large Capacity Lower Cost

The engineer admitted that his company had recently changed its designs so as to employ only mine cars of large capacity. In this way it hoped to lower the gathering cost, but he believed that the installation of gathering locomotives would not be justified economically unless they could gather a sufficient number of cars in a day to place the cost at a figure not exceeding 10c. per ton. The manufacturers are not entirely to blame for the prevalence of high gathering costs. In many instances the operator could reduce these if he would adopt a suitable system of mining when laying out the operation. At the conclusion of the discussion the members were shown the new Bureau film, "The Story of Petroleum."

Hoist for Heavy Duty on Mine Inclines

TO ELIMINATE in large measure the injury that is caused to hoisting machinery by inexperienced men a hoist should be not only simple and foolproof but rugged, with ample power and with adequate means of controlling overloads. Only in this manner can full service be obtained with a minimum of interruption. These principles have been followed in the design of the heavy-duty portable hoist shown in the accompanying illustration. This machine, which supersedes a former model and is manufactured by the Mining Machine Co., of Mountville, Pa., attains by means of a compound ratchet brake approximately 40 per cent greater braking effect than could be obtained by the use of a simple lever device. This gives such perfect control of the cars upon inclines that they may be held in a fixed position at any point.

The steel base upon which the machine is mounted is especially designed to afford portability. It permits the rapid and easy movement of the machine from place to place within the mine. All gears are built of semi-steel

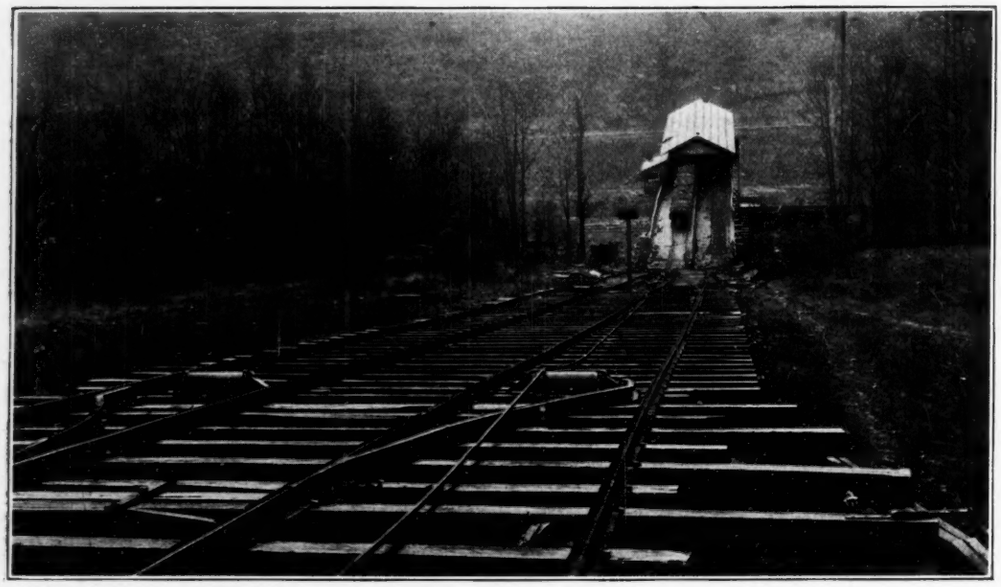


HOIST HAS COMPOUND RATCHET BRAKE

By use of this form of brake a greater effect can be obtained, so that it is possible to hold the cars at any point on the incline. The hoist is not geared for a high speed, as it has been found that on starting such a hoist or at a curve the rope is apt to jerk the cars off the track.

and the three-bearing construction facilitates uniformity of gear ratio and permits an increase of gear strength. A medium rope speed insures that the cars will not leave the track either in starting or upon curves. Such accidents often result in a broken cable or gear or possibly a burned-out motor.

Direct-current motors have been especially designed for these heavy-duty hoists. These are totally inclosed, making them moisture- and dust-proof. They are designed to operate directly across the line, independent of external resistance. A double-pole inclosed fuse switch is mounted above the motor within easy reach of the hoist driver. The complete unit, which is built in two sizes, is highly compact and requires only a limited space for its operation.



Derail for Incline

This device is permanently set to throw cars off the track except when the weighmaster by the pressure of his foot puts in operation the levers by which the derail is displaced. Cars coming up the incline can throw the derail over, but the action of a counterweight replaces it as soon as the cars have gone by.

Simple Derailing Device Affords Safety and Lessens Damage from "Wild Cars"

AT MANY mines where retarding conveyors are not in use, cars are lowered down steep inclined planes. Many examples of such inclines can be found east of Pittsburgh, where the Pittsburgh bed at places is located in the hilltops. At the No. 4 mines of the Irwin Gas Coal Co., at Elrico, in Westmoreland County, the Pittsburgh bed is being operated through drift openings lying at considerable elevations above the Turtle Creek branch of the Pennsylvania R.R., to which the mines are tributary.

At this operation the locomotives bring the loaded trips to a headhouse near the top of the mountain, where the cars are dropped down an inclined plane to the tipple by a balanced electric hoist engine. After being dumped they are elevated by the same means to the headhouse.

Provision must be made at both the head and foot of the plane to guard the men on the tipple from cars that may accidently break loose from trips of loads or empties—"wild cars" they are termed. In many such cases a spring switch is laid in the tracks, to be thrown when cars are seen to get free of the trip, but when the emergency comes the switch may be frozen or stiff or even broken or it may fail to close properly, and the protection expected is not realized and the cars go down the plane to the tipple, destroying almost everything in their line of travel.

At this incline no cars can enter the tipple unless the man in that building in control of the switch holds it in place until the cars have passed by it. The switch is normally in the protective position and is open only when thrown open by the man who has charge of it. Therefore, should a car break loose from the trip by reason of a faulty hitching or the trip itself run "wild" owing to the breaking of the rope or some similar accident, the derail switch does not have to be put in operation; it is ready for service without any dependence on human intervention.

At the head of the incline a device—one can scarcely term it a switch—is installed to serve a purpose similar to that performed by the switch at the foot of the plane. It is desirable to derail a wild car at the start of its journey before it has gained excessive momentum. It is not well to allow it to plunge to the bottom of the plane, where it would, of course, exact a heavy toll in wreckage. Even though it is almost certain to be deflected from the tipple and though it is not likely to endanger the lives of the men in that structure, it is well to stop it before it gains the speed of an express train.

A single bent rail is laid in each track, as shown in the foreground of the illustration, so as to serve as a derail. The point of the switch rail rests on an iron plate and is counterweighted so that it normally rests against the rail in position ready to throw the cars off the track. The counterweight, which is an old mine-car wheel, is suspended beneath the track at a point midway between the inside rails and serves to hold the switch points snugly but not inflexibly against the inside rail of each track. The flanges of the car wheels of an upcoming trip exert sufficient pressure against the switch points to force them to one side for the passage of the car.

Weighmaster Controls Derail from Desk

Both switch points are connected by rods to a lever between the tracks, the one on the right in the illustration being connected also to a bell crank placed well outside the rails. This bell crank in turn is actuated by a cable extending to the weigh house. Both derails are thus opened and closed simultaneously by the weighman, whose office overlooks the plane.

A pedal lever arrangement in his office allows him to open the track for the passage of a trip down the incline. He is signaled by the hoist engineer, when a trip is to be lowered. He then places his foot on the pedal and holds it in that position until the last car has cleared the switch points, when by removing his foot the derail arrangement is again put into effect.

The device is simple in principle, as well as highly effective. It can be built at any ordinary blacksmith shop, as was, in fact, the switch illustrated. Although cars infrequently break loose, yet it is best to be prepared against that eventuality. The arrangement described will deflect a car before it has had an opportunity to gather excessive speed and, consequently, the damage that might be done is reduced to a minimum.

Problems of Operating Men

Edited by James T. Beard

Improved Equipment vs. Conditions in Mines

The Question of Whether Improved Mining Equipment Should Conform to Present-Day Conditions in Mining, or Whether Methods and Systems Now Employed in Mines Should Be Changed and Adapted to the Use of the New Equipment Would Seem to Have But One Answer, Which We Fear Would Not Accord with the Opinions Expressed by This Writer

TWO articles in the issue of *Coal Age* for December 30 have attracted my attention. They are, first, the editorial entitled "Desultory Coal Loading," page 1316, and second, the article of N. D. Levin, who writes under the caption "Nothing Lacking in Loading Machines but Co-operation of Mine Executives," page 1321.

Some of the statements made in the editorial were, to my mind, at least remarkable. For instance, the editor remarks, "The waste of time in the average coal mine is appalling." I take it that he would have the miner who loads a ton of coal in five minutes—and many of the men can do it—keep up this gait for the full eight-hour day.

At that rate a man would load 96 tons in an eight-hour shift, and twelve men would load the entire output of a thousand-ton mine. Perhaps, my assumed meaning of this expression "appalling waste of time" is misapplied. The reference may not be to the loading of coal, exclusively, as the heading of the article would seem to imply.

Assuming the Impossible

However, take the case of a shortwall machine runner, who may cut, say 30 in. a minute, in a six-foot vein. With a good machine and an expert runner, this is not out of the question. But, could the failure to keep up this gait during the day warrant the statement that the runner is guilty of an "appalling waste of time"? By working a little overtime, such a runner could cut all the coal that twelve men could load.

Again, were it possible to run all the cars continuously in one direction along the face, a single motor would be sufficient to haul the coal. This and other instances could be given in support of the claim of an "appalling waste of time in the mine." Shades of Gilbreth and Gillette! Here, indeed, we have efficiency in engineering.

Turning to the second article, allow me to suggest that a little inquiry on the part of Mr. Levin would have convinced him that no coal operator, large or small, could take the several months that would be required to fix up his mine and adapt it to the use of a coal-loading machine. He is about right where he seems to emphasize the fact that, while the machine is on trial it is important to keep up the tonnage of the mine.

In my way of thinking, the machine must demonstrate its superiority under average working conditions, before it can form a part of the regular equipment of a mine in continuous operation. Without doubt, almost any machine could be made to show results if the mine management made it the chief business of the day to serve the machine.

Mining Methods Developed by Years of Practice

Practical men, however, know that all the efforts of the mine organization cannot be concentrated in one place. Were that possible, success would be assured whether the coal was loaded by hand or by machine; but other sections of the mine would be neglected by such a concentration of effort and would suffer.

Let me say, here, that the methods and systems employed in mines today, have been worked out by centuries of practice; and if a machine cannot go into a mine worked under these conditions and demonstrate its superiority it is not the machine that is wanted and will not prove a success. The operation of a mine is governed by conditions imposed by nature and which cannot be changed.

Speaking of moving the cars continuously in one direction along the face, probably every mine manager has thought of this and at least made the attempt to put it in practice. Unfortunately, however, the laws of man must conform and be subservient to the laws of nature. At the working face in a mine, the top has a most discouraging way of twisting the cribs sidewise and splintering them like matches, which destroys the best calculations.

After Mr. Levin has invested, say a million dollars in the development of a mine and the training of men to use the machine he describes, he will realize that the coal operator is a slave both to labor and to conditions in the mine and the market. Operators have been up against these conditions long enough to know that they must handle them in a way to make money for their stockholders and keep out of trouble with the land owner.

Pardon me, but I cannot refrain from quoting a little couplet of which I am reminded. It runs as follows:

> "Mother, may I go out to swim?
> Yes, my darling daughter;
> Hang your clothes on a hickory limb
> But don't go near the water."

The coal operator is always interested in improved mine equipment; but, at the same time, while regarding these improvements with deep interest, he must wait for their adaptation to his conditions. In other words, he must hang his clothes on a hickory limb but not go near the water. C. R. Stahl.

Stotesbury, W. Va.

Americanizing Work Among Miners

In the work of Americanizing the foreign element employed in our coal mines, there is no doubt but that the influence exerted by kindred societies is a strong factor. Of equal importance, however, are the examples and encouraging words of the officials in charge.

AMONG the excellent papers discussed, in the recent meeting of the Coal Mining Institute, held at Pittsburgh, Pa., none seemed to stand forth with greater prominence than that of E. E. Bach, regarding Americanization work among miners in Pennsylvania, the past year, reported in *Coal Age*, Dec. 23, p. 1284.

Judging from this abstract of the paper, nothing has been left undone by the coal companies that would improve the condition and elevate the standard of living among their miners and make them better citizens. When I observe the ingratitude manifested by some miners who are prone to think that every move made by the company has a selfish purpose, I think it must be quite discouraging to the large official army who are making these efforts in behalf of the men they employ.

To my knowledge, one company in this valley has never failed to do anything that would increase the safety of the miner and make his living conditions more sanitary. A great deal of money has been spent in providing the men with medical advice, supplying nurses in case of sickness and furnish-

ing instructors to teach what would make better citizens and more efficient workers. But, it is hard to make the average miner believe that these efforts are solely for his benefit and, to a considerable extent, this idea prevails among outsiders.

It is clear to all that the greatest efficiency is attained when there is co-operation, and employer and employee work hand in hand. The radical element that is always present among miners to a greater or less extent works against the co-operation that would otherwise exist among the men, and they are led to suspicion everything that is done.

Influence of Example

However, example goes farther than precept; and, in order to secure real co-operation on the part of the miners, there must be the same hearty co-operation of every member of the official staff of a colliery. Superintending a mine, today, is not unlike running a large store. The man behind the counter must know both the goods he offers and his customer, or his efforts will be in vain.

Let us get the idea into our minds that the rank and file of our men are well-meaning, law-abiding American citizens. My observation inclines me to think that they are as a class generous with their pocketbooks, upon every appeal for the support of American institutions. They must be met half-way by the same generosity of feeling if we are to gain their confidence.

Close observation leads me to believe that the standard of our miners is measured by the character and reputation of those charged with their supervision and instruction. I have often noted how quickly a miner will convey to his buddy some little thought or idea he has conceived of their foreman or his assistant. On this account, any one in charge of men must be careful lest some little act of his shall be misjudged and discredit him with his men.

Work of Kindred Societies Good But Fair Treatment Better

There is no doubt but that a large amount of good can be and is done by kindred societies to elevate their men. But more important, in my opinion, is the close touch of the man in charge of workers underground. His example and treatment of his men will either draw them toward him and make them friends or repel them as enemies.

Cursing and swearing only hardens men and makes them reckless. Far better is a word of encouragement together with a little instructive criticism. But, above all, is the strict keeping of a promise made to a man. Nothing will destroy his confidence quicker than the breaking or not keeping of a promise. It is better to be frank and tell him why his request cannot be granted than to attempt to deceive him and put him off with a promise that cannot be kept.

Before closing, let me say one word in reference to imparting a spirit of enthusiasm to workers so that they will have the same interest in making a good record for the mine as the foreman himself. Let me ask, how many men in charge of mines are approached by miners at the end of a shift to know the number of cars hoisted that day. My belief is that a very small percentage of our miners are interested in knowing what the day's record of the mine has been. It would be grand if every man had the desire to make yesterday's hoist look like a piker, and there would be no question as to the results.

Not long ago, I am glad to say, I observed this spirit of friendly competition between the workers in two shafts but a short distance apart and employing about the same number of miners. The spirit among the men grew to such an extent that numbers of them would wait at the head of the shaft, at night, to hear the official count. The loyalty was such that I have witnessed many a fist fight between drivers, one of whom would resent a remark that discredited his boss.

The opportunities of foreman and assistant foreman to bring about these conditions and develop a true spirit of loyalty and enthusiasm among their men are manifold. Their close touch with the men makes this possible and always within their grasp. Nothing is more instrumental in Americanizing the foreign element than bringing them to have this spirit of loyalty.

Plains, Pa. Richard Bowen.

Geology of the Coal Miner

The geology of the coal miner does not consist in long names with which he is unfamiliar, but in what he has observed as the characteristic formation of the coal measures in his locality.

MOST practical miners have read considerable on the geology of coal and were no doubt interested in the article of John Rose, treating on the origin and development of coal, *Coal Age*, Dec. 16, p. 1241.

As Mr. Rose has suggested, the average miner, though familiar with the different kinds of roof and floor enfolding seams of coal, seldom stops to think of their formation. Many like myself, hold their own theories in regard to the origin and development of the coal measures; but these are very largely conjecture and based on one's observation in the mine and such reading as he has been able to understand.

The experienced prospector who has long operated a diamond drill in any given section or locality, has come to know the general succession of the rocks and coal seams forming the measures in that district. It is his business and he is expected to know and be able to give information regarding the depth and character of the coal seams and other strata. But, like the miner, few coal drillers are more than practical men and many of the long names applied to the coal formations, in geology, are unfamiliar to them. They are apt to consider them as out of their line altogether.

Regarding the origin of coal, my own reading on the subject leads me to believe that coal was formed from the growth and decay of vegetable matter at the very place where it now lies. I do not think much of the drift theory. I believe that it took ages for this vegetable matter to be deposited and then overlaid with sediment, which settled from the waters that swept over the area. My idea is that it is practically impossible to measure these ages in years.

Changes Observed in a Lifetime Almost Imperceptible

The same is true in respect to other changes that are described in geology as having taken place. A man may live a hundred years and be able to see but little, if any, change in the streams with which he has been familiar since boyhood. Then, to be able to estimate the number of years required for a stream to cut out the Grand Canyon of Colorado is beyond our conception.

I spent several years in a mine where there were seven seams of workable coal. What perplexed me, however, was the fact that the adjoining mine had only five seams. Later, I came to understand that there was an upthrow fault running between the two mines, and the two seams had been lifted above the surface and were eventually eroded and lost.

Another strange feature was observed in the bottom seam, which averaged about ten feet in thickness and was practically clean coal till it started to rise on a 25 or 30 per cent grade and thinned out to 8 ft. in a distance of 200 ft. where it leveled off and contained dirt bands that were 2 ft. apart. The entire thickness of this portion of the seam varied from 12 to 14 ft. including the coal and dirt bands. I have never been able to account for the change in that seam.

Characteristics of "B Seam"

In this particular locality, a characteristic of the "B" or "Miller seam" is the rolls that occur in the bottom, which is always soft. The "D seam," in this locality, has many clay veins, which seems to indicate that the coal once has been broken by an upthrust and the crevices filled later with clay.

One thing that is remarkable is the observed absence of sandrock above the "D seam," as compared with the great thickness of sandstone below the "D" and above the "B" or lower Kittanning. In my opinion, this is the cause of the many creeps or squeezes that occur commonly in the latter seam. The breaking of the roof leaves the sandrock hanging and throws a great weight on the coal pillars. These and other items connected with the geology of coal mining are of great interest to the student in daily practice.

Indiana, Pa. Thomas Hogarth.

Mining Experience Required of Mine Superintendents

The blame for mine accidents is often laid on the shoulders of the mine foreman when, in reality, he has been forced to do the impossible, by an exacting superintendent who lacks practical mining experience.

COMMENTING on the responsibility for the explosion that occurred some time since, in No. 3 mine of the Union Collieries Co., at Renton, Pa., Superintendent John G. Bart remarks, *Coal Age*, Dec. 9, p. 1192, that it is his "firm belief that had this foreman been less anxious to get the work started the accident would not have occurred."

This statement makes me wonder if its author has ever gotten after his foremen, at a time when the report of the day previous showed a shortage in the output of the mine, and told him to "brush up," when he, the super, knew down deep in his heart that the man was doing everything humanly possible to put coal on the tipple. It is this crowding of a good foreman who is working under difficult conditions and, perhaps, short of supplies and material or men, that is responsible for many avoidable mine accidents.

Incompetence of Superintendent Handicaps the Foreman

Consider for a moment the case of a superintendent who has never done any work himself in the mine and given charge of a large colliery, Anxious to make the best showing possible, he scrutinizes carefully all requisitions for supplies, and examines closely the daily cost-sheet, comparing these with tonnage and market conditions. As a result, the foreman is lucky if he gets the half of what he needs.

Thus handicapped, many a foreman has faced the daily problems in the mine. Short of both supplies and men and knowing what is expected of him, he takes chances that would make the superintendent's hair stand on end were he down in the mine himself instead of sitting safe at his office desk. At times, the plan succeeds but more often something happens, and the poor foreman gets the blame.

Speaking from an experience of 25 years underground, performing all classes of work, yet never having given up my habit of reading and studying after securing my certificate, I am inclined to say that it is often necessary for a foreman to use his own judgment, on receiving orders from a superintendent who lacks a practical knowledge and experience in mines. He must do this for his own protection and there will be fewer accidents.

In my opinion, no superintendent is fit for the job or should be given charge of a mine who has not worked in the mine and gained a thorough knowledge of the difficulties confronting the mine foreman. In the appointment of a superintendent it should not be a question of *who* the man is, but *what he is* and *what he has done*. The man's record should determine his fitness.

I may be pardoned for referring to a man who is young as a superintendent and now in charge of the Oliphant plant of the H. C. Frick Coke Co. Though working in the mine but three months where he has charge, I have seen that superintendent looking after matters underground, at all hours of the day and night. I have found him at the lamphouse mornings, before the mantrip went into the mine.

It goes without saying that such a superintendent will keep in touch with everything that is done. He knows what is needed and does not have to unnecessarily cut down the requisitions of his foreman for supplies. He knows from his own observation what is required. He is also a better judge of the daily expense and tonnage sheets.

JOHN H. WILEY.
Oliphant Furnace, Pa.

Inquiries Of General Interest

Mine-Locomotive-Haulage Proposition

Estimating the Number of Ten-Ton Locomotives Required To Handle an Output of 2,000 Tons, in an 8-hr. Day, Over Three Miles of Track, Having a Maximum Grade of One Per Cent Against the Loads

WILL *Coal Age* kindly advise how many 10-ton locomotives will be required to handle a daily output of 2,000 tons of coal in eight hours, under the following conditions: The distance between terminals is three miles. The road has a maximum grade of one per cent against the loads. The track is laid with 50-lb. rails and is in first-class condition. The mine cars have a capacity of 2-tons, and, like the track, are in excellent condition. It is assumed that the loads and empties are assembled at the terminals and there will be no delay in making up the trips at those points. I am anxious to secure this information at as early a day as possible. J. E. BUTLER, Gen. Mgr.,
Stearns Coal & Lumber Co.
Stearns, Ky.

In estimating on this haulage proposition, we will assume that the tractive effort of a locomotive is one-fifth of the weight resting on the drivers, or 400-lb. per ton. This is the force exerted at the circumference of the drivers, which cannot exceed the adhesion of the wheels to the rails. Sanding the rails will increase the tractive effort of a properly designed locomotive to 500-lb. or more, while wet or greasy rails may reduce it to 300 or possibly 250 lb. per ton.

Both the track and rolling stock being in good condition, the track resistance may be taken as 20 lb. per ton of moving load. If the cars are mounted on flexible-roller bearings and kept properly greased, however, the track resistance may fall as low as 15, 12, or even 10 lb. per ton of load.

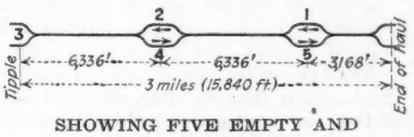
On moderate grades not exceeding 8 or 10 per cent, a grade resistance of 20 lb. per ton for each per cent of grade is allowed. On this one per cent grade, the grade resistance like the track resistance is 20 lb. per ton. The sum of the track and grade resistances in this case is, therefore, 40 lb. per ton of moving load.

Now, calling the weight of the loaded cars in a single trip hauled W, the weight of the total moving load is $W + 10$, expressed in tons. But the tractive effort of a 10-ton locomotive, on the assumed basis, is $10 \times 400 = 4{,}000$ lb., and the total resistance of the moving load is $40(W + 10)$. Equating these values we find for the weight of the loaded trip:

$$40(W + 10) = 4{,}000$$

$$W = \frac{4{,}000 - 400}{40} = 90 \text{ tons}$$

The weight of an empty car not being given, it may be taken as 4/5 of the capacity; or, for a 2-ton car, the weight would be $4/5(4{,}000) = 3{,}200$ lb., which makes the weight of a single loaded car 7,200 lb., or 3.6 tons. But



SHOWING FIVE EMPTY AND LOADED TRIPS

the weight of a loaded trip being 90 tons, the number of cars in a single trip is $90 \div 3.6 = 25$ cars. The total weight of coal hauled per trip is then $25 \times 2 = 50$ tons. This will require the making of $2{,}000 \div 50 = 40$ trips in an 8-hr. day.

Again, estimating on a speed of hauling of, say six miles per hour, one locomotive will make a round trip each hour of the day, or eight trips a day. On this basis there will be required $40 \div 8 = 5$ locomotives. The total length of haul per round trip is six miles, or $6 \times 5{,}280 = 31{,}680$ ft.

In order to avoid delay due to the several trips having to wait for each

other, two partings or passing tracks should be arranged to divide this haul into five stretches, which makes the length of each stretch 31,680 ÷ 5 = 6,336 ft. As indicated in the accompanying diagram, from the tipple to the first parting and from that parting to the second would then be two full stretches, while the distance from the second parting to the inside terminal would be a half-stretch.

For example, while trip No. 3 is at the tipple, trips Nos. 2 and 4 will be passing each other at the first parting. At the same time, trips Nos. 1 and 5 will be passing each other at the second parting. Trip No. 5 will go to the inside terminal and return to that parting in time to pass trip No. 4. And trip No. 1 will then be passing trip No. 3 at the first parting, while trip No. 2 will be at the tipple.

Examination Questions Answered

Examination for Mine Foremen, Fifteenth Anthracite District

(Selected Questions)

QUESTION—*The law requires that there shall be a medical room or emergency hospital at every mine. Where should these medical rooms be and what supplies should always be kept on hand in them?*

ANSWER—An Act approved May 29, 1901, of the anthracite law. requires every mine employing ten persons or more to establish medical rooms at convenient places on the surface and in the mines, for the treatment of injured employees. The law requires that there shall be provided a sufficient quantity of linseed oil, olive oil, bandages, linens, splints, woolen and waterproof blankets, besides other furnishings sufficient to accommodate two or more persons in a reclining or a comfortable sitting posture. (Sec. 1).

QUESTION—*What would be the result of a mixture of 90½ parts of air with 9½ parts of marsh gas?*

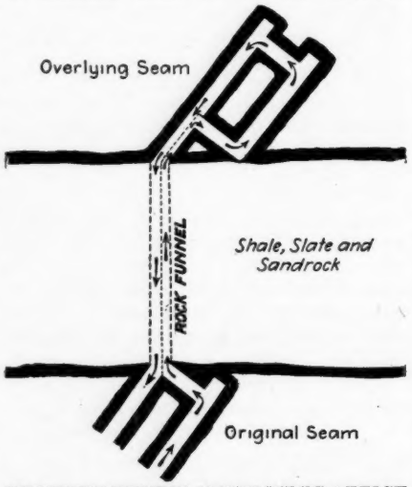
ANSWER—This mixture will contain 9.5 per cent of gas and constitute firedamp at its maximum explosive point. Its presence in the mine would be extremely dangerous and, if ignited, a violent explosion will take place.

QUESTION—*What extra precaution should be taken when two parties are driving toward each other in a mine?*

ANSWER—Care must be taken to check, from time to time, the distance of the two faces apart. No shots must be fired in either place without first signaling to the parties in the place approaching, informing them of the readiness to fire, and receiving from them a return signal to go ahead. These signals must be of such a character that it is not possible to misunderstand their meaning. In no case must a fuse or squib he ignited before a satisfactory return signal is received. When the two faces have approached to within, say eight or ten yards of each other, work should cease in one of the places, the men withdrawn and the place barricaded to prevent any one from entering. The remaining coal should then be taken out by the men in the other place.

QUESTION—*A tunnel has cut a new seam of coal. Show by rough sketch how you would ventilate the workings in this seam until you obtained a second opening. How many men are allowed by law to work in a section of a mine before the second opening is made?*

ANSWER—If the tunnel is driven as a single opening, which is common practice in the anthracite region, a line of brattice must be carried through



SHOWING VENTILATION BY BRATTICE THROUGH ROCK TUNNEL

the tunnel and extended to the face in the new seam, as shown in the accompanying figure, to provide the necessary ventilation up to the point where double entries are driven and it is possible to discontinue extending the brattice.

The Anthracite Mine Law (Art. 4, Sec. 1) forbids the employment of more than twenty persons at one time in a mine, until a second opening is provided and made available as an escapeway.

QUESTION—*A certain mine has been abandoned and allowed to fill with water. An adjoining mine is working toward these submerged workings. Explain fully what you, as foreman, would do to safeguard the men under your charge.*

ANSWER—A single heading only should be driven toward the submerged workings of the old mine. The Anthracite Mine Law (Art. 12, Rule 15) requires that "the working approaching such place shall not exceed 12 ft. in width and there shall be constantly kept, at a distance of not less than 20 ft. in advance, at least one borehole near the center of the working and sufficient flank boreholes on each side." Only safety lamps should be used in the place and a careful watch must be kept for the first appearance of water seeping through the strata. Wooden plugs must be kept on hand at the face ready to stop any hole that might tap the water. Only experienced men must be employed in the work. When a cut is made in the coal the test holes must be advanced an equal amount.

QUESTION—*An airway 7 ft. high is 12 ft. wide at the bottom and 8 ft. wide at the top. The anemometer reading per minute is 450 revolutions. What is the sectional area of the airway and what quantity of air is passing?*

ANSWER—The average width of this airway is ½ (8 + 12) = 10 ft. and the sectional area 7 × 10 = 70 sq. ft.

Assuming the reading taken with the instrument is a fair average velocity of the air current, the quantity of air in circulation is 450 × 70 = 31,500 cu. ft. per min.

QUESTION—*It is desired to get a hole through from a lower level to the level above for ventilation. The seam is 8 ft. thick and the pitch 40 deg. How would you make this connection without allowing the water to run down to the lower level?*

ANSWER—Drive the hole in the top coal, say four or five feet above the floor and make the hole wide enough to carry the quantity of air desired. Leave the bottom coal undisturbed.

QUESTION—*At a certain slope mine it was found that the chains and couplings used for hoisting in the slope broke frequently, causing wrecks that involved great expense to the company and danger to the workmen engaged at the bottom. Can you suggest a cause for these frequent breaks and a remedy to prevent them? It was not considered that the attachments were overloaded.*

ANSWER—Assuming the chains and couplings are of sufficient size for the load to be hoisted, as the question suggests, the frequent breaks may be caused by the engineer starting the trip too suddenly from the bottom. He should be cautioned in this regard and watched. All the chains and couplings must be examined at regular frequent intervals to ascertain their condition. If flaws are found in them or they seem to be corroding, by reason of the acid mine water eating away the surface of the metal, the attachments must be replaced with new ones frequently and no chances taken on their supposed strength. In order to avoid the results due to possible crystallization of the iron, tests should be made from time to time to determine whether such crystallization is taking place. Where chains or couplings are subject to corrosion in acid mine water, the application of tar or oil will be a benefit and retard these effects.

Two Closed-Shop Fights and Strikes Against Industrial Relations Court Outstanding Features of 1920

Neither of the Closed-Shop Fights Was Successful and at the Close of the Year Both Regions Were Working Almost Normally, Though the Union Hung on Dourly Despite Its Losing Struggle

By R. Dawson Hall*

NO report of real progress can be made by the union for 1920. It gained a few members, it is true, but it practically lost two big strikes for recognition. Nevertheless, it continued doggedly but hopelessly to fight on in a faint hope of gaining its point, which is, of course, to completely unionize the coal industry, which, it well knows, lives constantly from hand to mouth. The union believes, not without reason, that if it could unionize all the mines it could at will put a sprag in all industry and close down all manufacturing plants and blacken every domestic hearth in the country. The account which follows endeavors to show how the attempt to approach two further important steps in that direction were completely foiled by the resolution of the operators.

Attempts were made during 1920 to unionize the Pocahontas region and on Jan. 30 John L. Lewis, then acting president of the United Mine Workers, went down to Bluefield, W. Va., for the purpose of laying plans to that end. Nothing came of it, but in the early part of the year much activity was shown, the force of which was switched latter to the Williamson, Mingo County or Thacker district, which, while far distant and mining a different class of coal, is at the other end of the same large non-union area, an area, by the way, which made much trouble for the union by working throughout the big strike at the close of 1919.

Trouble in the Thacker district of Mingo County started in May with attempts at unionization of that field. This resulted on May 19 in a fight at the village of Matewan, in which seven detectives, the mayor of the village, a union organizer, a miner and a boy—11 persons—were killed. The detectives who had been evicting tenants at a mining village were fired on, it is alleged, by citizens of Matewan as they were preparing to leave by train, having broken their guns and put them in cases.

On June 29 a strike order was issued by the union calling out all the mine workers in Mingo County, West Virginia, and in Pike County, Kentucky. In July 80 per cent of the men in the field were alleged to have affiliated with the union. A tent colony had already been provided for at Pond Creek. Attacks were made almost daily on non-union men, several being killed.

Governor Appeals for Troops

At length the Governor of West Virginia appealed for troops, and on Aug. 29 an infantry battalion arrived to maintain order. Judge Damron on Sept. 6 displaced forty-two deputy sheriffs and replaced them by twenty professional and business men of Wiliamson. Seventy men who had been allowed to bear arms were deprived of them by the same authority.

A general strike in West Virginia was threatened should the troops aid strike breaking, but the action of the soldiers was such that even the mine workers could not condemn them. On Nov. 5 the troops were withdrawn, but as disorder followed Governor Cornwell on Nov. 26 called for their return. The troops arrived Nov. 28, and martial law was declared on the following day, and a house-to-house canvass for arms was made. This year ended with the troops still in control and the strike becoming a more and more difficult proposition for the United Mine Workers.

Another strike was that in Alabama. In that state recognition was only one of the issues whereas in the Mingo district it was the only issue. Alabama's year began with a big strike to procure reinstatement of about one thousand men who were alleged to have been dropped because they gave leading co-operation in the big strike. The Attorney General tried to have the mine workers and operators appoint six men on each side with an umpire to be appointed by Judge W. J. Grubb, but the operators refused to comply with the Attorney General's request.

Flat or Percentage Increase

The big Alabama strike commenced on May 19, when nearly 3,000 men quit work, and it grew till it became a serious menace to the industries and homes of the Southland. The union was, of course, interested in recognition, but the men were mainly cognizant of the wage question. The operators of Alabama, as non-union producers, believed themselves free to fix their own wages and refused to present their case to the Bituminous Coal Commission.

When the daymen in the Central Competitive Region were conceded $1 per day, or 20 per cent, the Alabama operators granted a 20-per cent advance, which with them, as they were paying $3.44 a day was 69c. The strike commenced in the domestic-coal fields and spread to those mining for coke production.

After the strike had run along for some time the district union managed to get the support of the international union, which had sent a commission of inquiry into the field. On Sept. 1 a general strike in the coal fields of Alabama was called by John L. Lewis, international president. Soon 12,000 out of 26,000 men were on strike. About 5,000 who were working in union mines were not included in the strike call.

Governor Kilby appointed a commission of three—George H. Denny, James L. Mayfield and C. E. Thomas—to investigate. This commission on Sept. 18 held both sides at fault. The strike resulted in much disorder and some deaths and, at the close of the year, was still continuing but with spent force. As industry and farming slackened, men entered the mines in numbers from the mills and farms.

Another bitterly waged strike but far less extensive occurred in the northern district of West Virginia along the Morgantown & Kingwood Ry., the Penn-Mary Coal Co. and the Connellsville Basin Coal Co. being the principal figures. It lasted for several months without attaining the ends sought.

Union Successful in New River

In the New River field—District 29—a dispute early arose as to the check-off, which had been granted by most of the operators to date from Sept. 1 of the year 1919. It was given with the understanding that it was conditional on the terms of the agreement being kept. The strike of Nov. 1 was a clear violation of a basal matter in that agreement and the operators, in consequence, refused to continue the check-off, which was granted solely with the expectation that if there were a strike the New River region would work uninterruptedly.

The mine workers decided to present their contention to the adjudication of the Bituminous Coal Commission. The Attorney General on Dec. 24 had requested the New River Coal Operators Association to re-establish the check-off now that the men were returning to work, but the association did not feel that the mine workers had any right to demand it. To force its restoration many of the mines went on strike and finally on Feb. 4 at a meeting at Charleston, the check-off was re-established, no fines for idleness being collected.

The year in Kansas was one of progress from disorder to order. Some will attribute this desirable advance to the passage of the Industrial Relations Court; other will regard that court as merely a means to the elimination of Alexander Howat, who for years has been a disturber in the labor affairs of Kansas. The United Mine Workers of America as a whole will be disposed to credit the latter cause. It does not like the court, but far less does it like Mr. Howat, for many years district president of the United Mine Workers in Kansas, but constantly an advocate of the breaking of union contracts and always at variance with the international headquarters of the union.

On Jan. 26 four hundred Kansas miners went on strike because the Industrial Relations Court was established. A mine of the Western Coal &

*Editor, *Coal Age*.

Mining Co. at Franklin and one of the Wear Coal Co. at Dunkirk were shut down by the strike. Governor Allen immediately ordered action in conformity with the new law in regard to this strike activity. The men declared that they were not on strike. It was no conspiracy. They "just didn't feel like working" and accordingly quit, but later went back to work.

On April 5 as many as two thousand men went on strike. When Howat and members of his staff were summoned on April 6 to appear before the Industrial Relations Court they refused and were arrested and sent to jail. This resulted in a new manifestation of strike activity which increased the number of strikers from two thousand to eleven thousand and for a while Governor Allen threatened to take over the mines of the state. Ninety per cent of the mine workers were now included in the strike. Governor Allen believed, however, that 40 to 50 per cent of them would mine coal for the state if called on to do so.

Howat Made To Call Off Strike

On April 15 Judge Curran of the Crawford County District Court overruled a motion for a retrial of Howat and his friends. On April 17 the court ordered that Howat direct the miners to return to work. Howat and his friends were bailed that same day, and on April 19 Howat ordered the mine workers to return to work and all but thirty complied. On April 30 Judge Curran declared the Kansas Industrial Court constitutional and enjoined Howat from calling a strike.

On June 16 six officials of the United Mine Workers refused to testify before the Industrial Relations Court as to the strike in the Kansas coal fields and were sentenced to jail till they consented to give testimony. Bonds were offered, however, and a stay of execution was granted. A strike followed son thereafter and on July 28 two thousand four hundred men were idle. This strike was investigated by the Industrial Relations Court beginning July 31. On Aug. 4 John L. Lewis, president of the United Mine Workers, sent telegrams to the thirty-three locals ordering them back to work. Commencing Aug. 7 all the mines gradually resumed work and on Aug. 13 the last mine idle was returned as being in operation.

Mr. Howat and three officials of the union appealed to the Supreme Court and on Sept. 2 got a ten-day stay of execution. But the law is not meant to support troublemakers like Mr. Howat and he was eventually sent to jail and apparently shorn of the power to disturb the peace of Kansas, deprive its industries of coal or impoverish its mine workers.

The anthracite mines have not been troubled as much with small strikes during the past year as in former times. One company, the Pennsylvania Coal Co., has had an immense amount of misfortune. On July 1 it was having trouble about a check-weighman and check-docking boss, who the company declared were not properly elected and whom it would not permit to serve. No. 6 colliery was the plant in question. Trouble has broken out at that colliery more persistently than in any other of the Pennsylvania Coal Co.

Later a strike broke out against subcontracting; the men did not want parts of the mine farmed out to contractors who in turn would hire day laborers. About eight thousand men went out and the Anthracite Strike Commission threatened them with a loss of their back pay if they did not return at once. The union opposed the strike but the men for the most part were insurgents and opposed the union, at one time having a button strike and refusing to continue at work so long as men who had only the United Mine Workers button remained on the job. The union tried, according to the insurgents, to bar men from voting at the general union election by preventing them from joining the union till after the election had occurred.

Agreed To Discharge Contractors

Charges were made that the company's payrolls were padded and that contractors paid men to draw money that had ben improperly placed to their credit. After eleven weeks the strike ended by the companies—the Pennsylvania Coal Co. and the Hillside Coal & Iron Co.—agreeing on Oct. 7 to abolish the contracting system and discharge all contractors absolutely except in cases where the grievance committee allowed them to work in other positions.

Later there were threats to strike if three company superintendents and General Superintendent W. P. Jennings were not discharged. One of the three was given leave of absence, and the strike was not declared. At the end of the year the unreasonable attitude of the mine workers still continued. They had hatched up another grievance.

They had been paid on the basis of an extremely long ton, 2,700 lb., in order that the companies might reap therefrom a standard long ton of salable coal. Judgment might question the use of such a method of payment, but the men were not agitating so much for its termination as for the $10,000,000 of back pay which was predicated on the proposition that if the contract had ben different and based on the smaller ton $10,000,000 more would have been received by the employees.

Commercial Shipment of Kanawha Coal Upset By Embargoes and Priority Orders

Estimate of Production of Kanawha and Coal River District During 1920 Is 10,000,000 Tons—Railroads Early Buyers—Lake and New England Orders Disturbing Factors—Late Evidence of Labor Unrest

COMMERCIAL shipments of coal from the Kanawha and Coal River districts of West Virginia from January to November, 1920, were 7,901,900 net tons, not including operations on the north side of the Kanawha River. It is estimated that production of the whole field for the year was 10,000,000 tons. Capacity production was not reached at any time, however, because there was a chronic car shortage throughout the year.

Early in the year, with railroad fuel scarce, railroads were heavy buyers. Those from whom they were obtaining coal, of course, received a preferential supply of empties, and protests against the practice were unavailing. Priority orders of the Interstate Commerce Commission were a factor in preventing producers from meeting the commercial demand for coal. The Lake service order and to some extent the New England service order deprived the general market of a large tonnage from Kanawha and Coal River mines, as is shown by the fact that for a time 20 per cent of the output of the field was required for the Lakes.

Export shipments from the Kanawha field were greatly reduced by repeated and protracted embargoes imposed either wilfully to keep Kanawha coal in domestic markets or else because of the physical inability of the Chesapeake & Ohio to handle the coal at Tidewater. For a time there was an embargo every Monday and later in the season there was a continuous embargo, no coal from points west of Handley being permitted to move eastward unless loaded in 70-ton cars, which were difficult to obtain.

The small, newly established concerns in the Kanawha field sold most of their output, it is believed, on the spot market, but the older and larger companies, having due regard for the amenities and ethics of the business and with a view to discouraging high prices and a runaway market, stuck to contracts very closely. In fact at a time when coal was bringing as high as $10 to $15 a ton on the open market, many Kanawha and Coal River producers were handling their output under contract at from $4 to $4.50 a ton. Contract cancellations by consumers became quite general toward the end of 1920, and there was no market for coal from the field at the end of the year and little coal was being shipped either on contract or otherwise.

There was, on the surface at least, less unrest among the miners during 1920 than there had been during 1919 and there were no strikes of any consequence in the field during the year. Kanawha mine leaders took an active part in a political movement for the election to the governorship of a man who was generally regarded as the particular candidate of the United Mine Workers. Not only was an increase granted to miners as such in the spring but in the autumn an advance of $1.50 a day was granted to day and monthly men. The only strike in connection with the demand for an increase for daymen was on the part of drivers at one operation. Strikes, such as they were, were of minor importance.

Bill Proposing Socialization of German Coal Mines to Be Submitted at Opening of Next Parliament

Apparent Abatement of Interest Due to Temporary Overshadowing by Coming Plebiscite in Upper Silesia—Fate of Famous Coal Province Will Have Important Bearing on Teuton Fuel Situation —Despite Unsettled Conditions, New Shafts Are Being Sunk

By H. O. Herzog
Berlin, Germany

After several months of heated discussion public excitement surrounding the problem of the socialization of the German coal mines has somewhat abated, but only temporarily. The powers behind the scenes, which are making every effort to bring this matter to an issue, are vigorously at work and are urging the government to go ahead. The socialization bill will be submitted to the Parliament at the opening of the coming session, although the impression prevails that the matter is not sufficiently prepared yet for legislation. In fact the many and diverging proposals and suggestions which have come forward during the preparatory stages have so confused the whole problem that the Parliament is subdivided into a bewildering number of opinions, not one party being quite unanimous on the subject.

Lively times are sure to come when the first reading of the bill takes place. Close observers are gaining the conviction that socialization has become an object of party warfare, with the ultimate purpose of upsetting the present government. The responsibility of forming such momentous decisions during the present unsettled state of affairs in Germany is weighing heavily on all responsible legislators, and at present there seems little chance for a clear majority on any bill which would cause a radical alteration of conditions.

Socialization of coal mining as a center of public interest has been superseded by the coming plebiscite in Upper Silesia, by which it will be decided whether the province shall fall to Poland or remain German. Upper Silesia is one of the richest German provinces, and political strife for it is running high between Germans and Poles. The population is kept in great excitement by the propaganda carried on by both sides. As the fate of Upper Silesia is a source of unrest in the center of Europe, it seems a matter of the utmost expediency to settle it without delay. Half of the population is armed and bloodshed is expected during the polling, but as no steps are being taken to alter conditions, it is difficult to see how matters can be improved by further procrastination.

Upper Silesia Contains Vast Mineral Wealth

Upper Silesia, which in 1871 had only 131,000 inhabitants, has now 2,200,000, of which 356,000 are employed in mining and other industries. The province contains in a narrow space probably more mineral wealth than any other part of the Continent. The area of the coal deposits is stated to be 1,200 square miles, and the quantity worth mining 113,000,000,000 tons. The production of coal in 1914 was 43,000,000 tons, valued at 400,000,000 gold marks. It is the second largest in Germany, and was nearly double the production of the whole Russian Empire and one and a half times that of the Austro-Hungarian Empire.

In spite of the unsettled situation in the Upper Silesian district several mines have begun extensions. The Hohenlohe mine has been put into operation again and is sinking a new shaft. The State mine of Königsgrube has completed a new shaft. In Lower Silesia, which in November, 1920, produced 423,000 tons of coal, production has very nearly reached that of 1913. A further increase of production is expected from the conclusion of an agreement with the miners for longer shifts. An improvement is noticeable also in Saxony, where the production in November was larger than in October in spite of shorter working time.

Coal production in Bavaria also is on the upward grade. There is an increase of 22.5 per cent in the comparison even to the year 1913, which has so far shown the highest production figures. This rise is due to a large increase in miners, the number of which from 1913 to 1918 increased from 5,800 to 13,000; for the current year the figures are not available yet.

Total German production of coal and brown coal in November showed a slight improvement compared with October, which would be even more marked if both months had had an equal number of working days.

German Coal Situation Has Favorable Outlook

The figures show that Germany's coal situation, although still precarious in comparison to the years of affluence before the war, is on a fair road to improvement. The 24,000,000 tons per year which Germany has to supply to the allied countries under the Spa treaty are nearly made up by the increase since last year. Present production would just cover Germany's own needs on the basis of consumption of the last pre-war years. Fuel consumption in 1911 was 137,000,000 tons; 1912, 145,000,000 tons; 1913, 156,000,000 tons; 1914, 134,000,000 tons.

The supply under the Spa treaty and for export would therefore roughly represent the country's coal shortage, not taking into account the consumption of parts detached from Germany under the peace treaty (an item not to be neglected in the case of Alsace-Lorraine and the Sarre district, with their extensive industries), the savings effected by strictest economy, and the relief afforded by increased brown-coal production. The country would make up the shortage by imports if the low rate of exchange did not prohibit. Small quantities of foreign coal, however, find their way to Germany. The first cargo of English coal recently arrived in Hamburg. The coal was Durham gas coal, for which a price of 75s. f.o.b. Tyne was paid.

Such coal imports demonstrate the shortage in Germany, and evidently are meant to do that. They are given broad publicity, which somewhat enhances the quantity imported. This is surely the impression received when considering that the free exports of coal Germany is making to Holland, Switzerland and other countries by far exceeds the few imports. During October, 1920, exports from Germany to Holland included 83,000 tons of coal, 14,000 tons of coke, and 3,000 tons of brown coal briquets. German imports to Holland are 38 per cent of the total, at an average price of 59 florins per ton. These imports are second only to those of the United States, which are 44 per cent of the total, at an average price of 70 florins per ton.

Operators, Paying Bonuses, Seek Higher Prices

The efforts to increase German output in the majority of cases are going in the same direction—*i.e.*, to put on additional labor and to raise the individual output by giving premiums to the miners. This, of course, adds heavily to the expenses of the mines, and the mine owners are constantly endeavoring to raise the prices of coal. The government has so far opposed such attempts, and in this is backed by the industry and by the whole population. Judging from financial results the mines are in a strong position and their demand of higher coal prices meets with no sympathy. Matters will no doubt be somewhat altered when the increased expenses of this year appear on the

balance sheets. It may be said, however, that until the financial position of the mining companies shows weakening, the chances are that coal prices will not be increased.

The following figures show the average wages of the miners for 1920 in comparison to last year. The wages in marks per man per day were as follows:

	June, 1920	June, 1919
Upper Silesia	49.00	20.00
Lower Silesia	42.00	15.50
Lower Rhine district	53.00	24.00
Ruhr district	49.50	22.50

Since June, 1920, wages have been increased in the Ruhr district from 49.50 to 60 marks per shift. From the above figures it appears that the wages have since last year more than doubled. The total of miners' wages in Prussia in the second quarter of 1920 was 1,991,000,000 marks, compared with 1,472,000,000 marks in the first quarter of the same year. From these figures it may be taken that the situation of the mines is indeed not as rosy as it was last year.

The number of miners employed is constantly being increased as far as housing facilities will permit. As the limit will sooner or later be reached, the government is making preparations to open up new mines. The Prussian Diet has a bill in preparation for removing ancient rights, of which there exists a great number, for undeveloped mining fields of small and medium size. On the strength of this bill the Prussian State assumes title to the mining rights. It is purposed to exploit these by granting leases.

A new development which almost amounts to socialization is in progress in Jugo-Slavia. The Jugoslavian government has recently formulated the following decision: (1) To establish a central office in Belgrade for the control of the country's coal production. (2) The prices of coal produced in private mines will be regulated in such a way that the owner will receive a share in the profits and a fair return on his investment, but he will be compelled to appropriate part of his profits to increased production.

An arrangement has lately been made between Germany and Czechoslavakia with regard to the exchange of German coal and coke for Bohemian brown coal. Germany undertakes to supply monthly 105,000 tons of coal and coke, mostly from Silesia, whereas Czechoslavakia will supply to Germany 202,000 tons of Bohemian brown coal and 4,000 tons of coal from the Pilsen district.

While the German mine owners are clamoring for an increase in coal prices, the coal situation in neighboring countries seems to be undergoing a radical change. In Switzerland reductions have been made for certain classes of fuel. It seems that Switzerland is now getting more coal than she wants from Germany as well as from America. In consequence Swiss dealers are trying to cancel contracts, but find themselves faced by demands of high indemnities.

In France the prices of coal have lately been considerably reduced, for instance, for German coal from 180 to 150 francs per ton.

A sharp decline in demand for coal is reported from Sweden. English importers in that country have been pushed to the wall by American competition, but they seem to have made up their mind now to underbid American prices. Recent quotations show a reduction of from 30 to 40 per cent, evidently caused by the business depression in Sweden. The country seems to be saturated with coal. The 4,800-ton cargo of the American coal steamer Dicto was sold at the exchange auction in Stockholm at prices varying from 39 to 60 kronen per ton. The auction was held because of the failure of the importer, who paid 160 kronen per ton.

COAL PRODUCTION IN HUNGARY at present is 19,000 tons a day compared with 9,000 tons during the reign of the Hungarian Soviet Government. The country's own requirements are eight million tons per year.

COAL PRODUCTION OF THE Sarre district under French administration was in October 846,000 tons, which is above the average of the previous years since 1914, but behind the production of the preceding six or seven years, when the annual production was more than 11,000,000 tons and in 1913 even reached 12,000,000 tons.

Coal Miners Take 15.8 Per Cent Time Off Observing Holidays

HOLIDAYS which are more or less observed by the workmen in coal mines numbered 58 in 1920. This is 15.8 per cent of the number of the days in the year. When Sundays are added it can be seen that the percentage of days in which no work or a reduced amount of work is done in coal mines is large. As a large number of mine workers belong to the Greek orthodox church the Julian calendar is brought into use. Thus there are always two Easters, two Christmases, two New Year's Days, etc.

The holidays and the holy days in 1921 are as follows:

January

1 New Year's Day
6 Epiphany (Roman)
7 Christmas (Greek)
9 St. Stephen's Day (Greek)
14 Circumcision (Greek)
19 Epiphany (Greek)

Fe'ruary

2 Candlemas (Roman)
8 Shrove Tuesday (Roman)
9 Ash Wednesday (Roman)
12 Lincoln's Birthday
15 Purification (Greek)
16 Ash Wednesday (Greek)
22 Washington's Birthday

March

17 St. Patrick's Day (Roman)
19 St. Joseph's Day (Roman)
24 Maundy Thursday (Roman)
25 Good and Great Friday (Roman) (Greek)

April

1 Eight-Hour Day
7 Annunciation (Greek)

May

5 Ascension (Roman) (Greek)
6 St. George's Day (Greek)
16 Whit Monday (Roman)
27 Coronation of the Emperor (Russ.)
30 Memorial Day

June

8 Pentacost (Roman)
9 Holy Ghost (Greek)
19 Corpus Christi (Roman)
24 Nativity of John the Baptist (Roman)

July

4 Independence Day
12 Peter and Paul's Day (Greek)

August

14 First Day of Fast of Theotokos (Greek)
15 Assumption (Roman)
19 Transfiguration (Greek)
28 Repose of Theotokos (Greek)
28 St. Augustine (Roman)

September

5 Labor Day
7 St. Felix' Day
12 St. Alexander Nevsky (Russian)
21 Nativity of Theotokos (Greek)
27 Exultation of the Cross (Greek)
29 Michaelmas (Roman)

October

12 Columbus Day (Italian)
14 Patronage of Theotokos (Greek)
29 Mitchell Day (Anthracite)

Novem'ber

1 All Saints Day (Roman)
2 All Souls Day (Roman)
8 Election Day
11 Armistice Day
21 St. Michael's Day (Roman)
24 Thanksgiving
28 First Day of Fast of Theotokos (Greek)

Decem'ber

4 Entrance of Theotokos (Greek)
8 Immaculate Conception (Roman)
19 St. Michael's Day (Greek)
22 Conception of Theotokos (Greek)
25 Christmas

The degree in which holidays may or may not be celebrated is largely dependent on the religion and nationality of the labor employed at each of the various mines.

The mine workers who celebrate the Greek Catholic holidays are principally Russians, Greeks, Bulgarians and Serbians. Approximately 20 per cent of the Hungarians and Slovaks also celebrate the Greek Church holidays. The remaining 80 per cent celebrate only the Roman Catholic holidays.

Industrial Depression Causes Decrease in Winter Power Production

PUBLIC utilities and central power stations in the United States consumed 3,164,054 net tons of coal in the production of power in November, 1920, according to a report recently issued by the U. S. Geological Survey. This quantity was almost identical with that consumed in October, but about 150,000 tons more than in August and September. The same report gives the total production of power from coal, oil, gas and water, and states that the average daily production of electricity in the last quarter of 1920 was little, if any, greater than in the summer period, whereas in previous years the production of power regularly showed increases in the winter season over the summer.

To the decrease in industrial activity in the last quarter of 1920 is attributed the lack of normal winter demand for power. It is estimated that the total output of electric power for 1920 was 44,100,000,000 kw.-hrs., an increase of about 13 to 14 per cent over 1919. The proportion of the total power produced which comes from hydro-electric plants ranged from 33 to 42 per cent in 1920 and was 37 per cent in November. In addition to the coal used 1,855,845,000 cu.ft. of natural gas and 962,368 barrels of oil were used as fuel in the production of power in November, 1920.

The Weather Vane of Industry

News Notes Chronicling the Trend of Industrial Activities on Which Depends the Immediate and Future Market for Coal

IF one should begin to think of normal times in terms of last year, then business will never be normal "within our lifetime," declared Salmon P. Halle, president of the National Retail Dry Goods Association, in his opening address Feb. 9 at the convention of that organization in New York City. He added, "But if you will set some place between the low of 1912 and 1913 and the high of 1919, and make plans accordingly, you will very soon find things looking normal and improving daily."

Discussing the situation further, Mr. Halle said: "We have all prided ourselves on our wonderful ability to manage business during this period, but the test is here and it will be the 'survival of the fittest' from now on.

"Study the conditions of your neighborhood, study them in your city. Make your plans and try to build to them. Study your merchandise conditions, study your outlets, and most important of all, be sure that you are financially able to go through with the plans that you have made.

"Remember that in making contacts that will acquaint you with world conditions, you are making yourself a better merchant and a more successful merchant in the largest sense of the word."

L. & N. Orders 2,700 Freight Cars

Orders for 2,700 freight cars have been placed by the Louisville & Nashville Railroad Co., according to *Railway Age*. The contracts have been awarded as follows: 1,500 box cars and 100 40-ton stock cars from American Car & Foundry; 500 box cars from Mount Vernon Car Manufacturing Co.; 300 40-ton coke cars and 300 55-ton gondola cars from the Chickasaw Shipbuilding Co. The Tientsin-Pukow is in the market for 200 box cars in addition to inquiries for 300 gondola cars previously reported. Advices received here from abroad indicate that this system will soon purchase eleven all-steel passenger trains of five cars each. Under arrangements whereby a credit with American firms amounting to $5,000,000 has been established, it is expected that the Mexican railways will soon enter this market for railroad equipment.

Ingot Production Low in January

Steel ingot production in the United States during the month of January, according to a compilation of the American Iron and Steel Institute, amounted to 2,201,866 tons, compared with 2,340,365 tons in December and 2,968,102 tons in November. Excluding the strike months of 1919, the total for January is the lowest since May of 1919. The above figures are compiled from reports received from companies responsible for about 85 per cent. of the ingot production in the country.

Cotton Mill Runs Night Shift

The Naumkeag Steam Cotton Mills, Salem, Mass., on Monday, Feb. 14, began a night shift which will be run five nights a week. Agent J. Foster Smith explained that the extra operations were intended to take care of surplus yarn produced by additional spinning machinery.

Cotton Goods Orders Exceed Supply

Marshall Field & Co., in a weekly review of the wholesale drygoods trade as of Feb. 5, says: "Current wholesale distribution of drygoods has again shown a steady increase during the week. The substantial volume of orders for spring merchandise which is being received clearly indicates that most retailers now have their stocks in a healthy condition and are preparing to do business with a renewed confidence in the general situation. Our mills are running at full capacity, and the demand at the present time for certain lines of cotton goods, particularly ginghams, bedspreads and sheetings, is actually in excess of the supply."

Thread Mill Runs at Night

J. & P. Coats, thread manufacturers, Pawtucket, R. I., announced Feb. 9 that all departments would thereafter be operated 48 hours a week, and that a night shift would be started in the spinning department. For some weeks several of the departments have been operated only two or three days a week. The plant employs 2,500 on day work. The Weypoyset Company of Central Falls also announced that a night shift would be run in its carding and spinning departments, employing 350.

Glass Plant Resumes Operations

The Flacous Glass plant at Tarentum, near Pittsburgh, Pa., resumed operations Feb. 9 after a shutdown since the first of the year. Two hundred workers returned to their places in the plant.

Ford New England Plant Running

All departments of the Ford Motor Co.'s assembling plant at Cambridge, Mass., resumed work Thursday, Feb. 10, according to an announcement by the New England manager, R. E. Jones. The plant had been closed nearly a month.

Atlas Cement Co. Closes Two Plants

The Atlas Portland Cement Company announced Feb. 9 that it had closed its plants at Northampton, Pa., and Hudson, N. Y., and had reduced wages at its Hannibal, Mo., plant, because of conditions in the industry.

McKeesport Tin Plate Mills Reopen

Twenty of the McKeesport Tin Plate Co. mills at McKeesport, Pa., resumed operations Feb. 7 after a shutdown since Dec. 23. The men who returned to work accepted a 20 per cent wage reduction. Officials of the concern said they were hopeful that conditions will warrant continuous operations with gradual additions. Twenty-four other mills of the company are still shut down.

Paper Mill for Louisiana

A modern paper mill estimated to cost $2,000,000 is to be built at Monroe, La. The location was selected because of the abundance of wood from sawmills and nearness to the Monroe gas fields for cheap fuel. The Louisiana State Forestry Department will co-operate with the projectors of the mill, who plan an extensive reforestation development in connection with the mill's supply of raw material.

Plan $1,000,000 Factory

Plans and specifications have been prepared for the construction of a $1,000,000 fertilizer factory at Baltimore, Md., the annual output to be 125,000 tons of material.

Foreign Markets and Export News

France Practically Embargoes American Coal

France has fixed a new maximum price of $9 per ton c.i.f. French-Atlantic ports for all American coal. This is the lowest level American coal has reached since it began declining last October.

Coal dealers of France, meeting in Paris in a national convention, declare that this action is in effect an embargo on American coal as no American company could possibly afford to sell at the new price. The French dealers approved the fixing of the new price as a temporary measure. The chief purpose of the present meeting of the dealers, however, is to protest against the arbitrary action of the Government in fixing purchase and sale prices for all coal in France.

The new price for American coal was made necessary through the fear that France would be glutted with American coal to the detriment of her mining industry. There is now more than six months' coal supply in France with poor prospects of an industrial revival sufficient to absorb the surplus stocks.

Port of New York Export Shipments Increased Rapidly in 1920

Complete reports for 1920 show there were shipped from the Port of New York 219,212 tons of anthracite; 253,049 tons of bituminous and 34,718 tons of coke, which is more than in any two years previously.

Last summer and fall it was claimed that Canada was being well taken care of to the detriment of domestic trade. Custom House reports show that during the year just closed Canada received through this port less coal than in any of the three preceding years, the shipments being as follows: 1917, 98,402 tons; 1918, 68,763 tons; 1919, 46,570 tons, and 1920, 41,125 tons. France was shipped 57,048 tons; Italy, 4,882; Sweden, 6,910; Netherlands, 23,824; Denmark, 14,433; Portugal, 1,373; Egypt, 446, and Brazil, 6,307 tons.

Exports from the Port of New York were:

ANTHRACITE

	Tons	Value
1917	134,252	$987,178.00
1918	82,447	584,087.00
1919	70,984	624,809.00
1920	219,212	2,995,282.00

BITUMINOUS

	Tons	Value
1917	14,348	$91,534.00
1918	48,717	349,369.00
1919	29,277	210,746.00
1920	253,049	3,630,089.00

COKE

	Tons	Value
1917	21,908	$283,735.00
1918	10,937	174,114.00
1919	14,411	185,966.00
1920	34,718	702,379.00

ACCORDING TO CONSUL GENERAL ANDERSON at Rotterdam the prospect for American coal in northern European markets in the near future will assume a pre-war nature, except it is likely to be in much larger volume. Demand will be mostly for special grades for technical uses, particularly for the manufacture of gas. At present a fair quantity of American gas coal is being received and contracts for 1921 are being made for these special grades. All authorities seem to agree that northern Europe is now able to take care of itself so far as ordinary grades are concerned.

A GERMAN COMBINATION OF INTERESTS has been closed between the Rheinische Stahlwerke (steel works), which for the purpose increases its capital stock from 65,000,000 marks to 120,000,000 marks, and the Arenberg coal mines.

United States Is Largest Swiss Coal Supplier

Imports of coal into Switzerland during the last two years were as follows:

Country of origin	1919	1920
United States	508,632 tons	1,227,259 tons
England	121,241 tons	638,497 tons
Belgium	419,333 tons	105,078 tons
Saar District	322,728 tons	245,890 tons
Ruhr District	182,668 tons	250,079 tons
Rhenanian brown coal	65,356 tons	70,575 tons
France	69,818 tons	50,656 tons
Austria	4,312 tons	.....
Total tons	1,694,088 tons	2,588,034 tons

From these figures it will be seen that during the last two years the United States has been the largest coal supplier to Switzerland. In December last the figures were: United States, 137,862; England, 87,337; Saar, 17,050; Ruhr, 9,270; Belgium, 2,834, and France, 1,967; total, 256,330 tons.

Britain Frees Inland Coal

The British Department of Mines announces that all controlled prices on the distribution of inland coal will be removed March 1.

The only restriction which will remain on export coal is where it is probable there will be a deficiency at home.

South Wales colliers are resisting buyers' efforts to secure lower prices, but the pressure of excessive stocks is difficult to resist. Admiralty steamless is being quoted at £2 17s. 6d. to £3, smalls £1 5s. to £1 10s., cargo £1 to £1 2s. 6d. and inferior 15s. to £1. Coke for export is quoted at £3 15s.

GERMANY WOULD CUT DOWN coal deliveries to France. Charles Bergmann, head of the German delegation in Paris, has delivered to the Allies a memorandum pointing out that it is impossible for Germany to continue coal deliveries on the scale provided for in the Spa agreement after Feb. 1. It says Germany's industries are suffering from a shortage, while the French are sufficiently supplied. Germany, adds the memorandum, has not received her expected coal quota from Silesia, and proposes that after Feb. 1 France agree to accept 1,800,000 tons monthly. Germany further requests a continuation of payment of the five gold marks per ton premium and an additional cash compensation to adjust the difference between inland and world market prices.

POLAND INTENDS TO CONTINUE in Upper Silesia, after the plebiscite, the same system of the exploitation of the coal resources that exists today and will not make them subject to the direction of the coal office. This is to insure the rapid and normal development of the coal industry which has been customary in the past.

BRITISH COAL OUTPUT for the year 1920 approximated 231,000,000 tons, as compared to 229,000,000 tons in 1919, according to a recent report. From Nov. 13 to Dec. 18, the test period of output to determine miners' right to higher wages, the weekly production averaged 5,215,160 tons, or at the rate of 260,758,000 tons per year. The output is steadily gaining; that for the week ended Jan. 15 was 4,898,000 tons.

CONTINUED LACK OF COAL in Lodz has recently closed a number of big factories. If supplies of coal are not received in the near future, the activity of the entire industry of the Lodz district will cease.

GERMANY HAS AGAIN WITHHELD authorization for an advance in coal prices of 25 marks, proposed by the Rhenan Westphalian mines.

Quotations on Bunker Coal in Foreign Ports as of January 19, 1921

WILLARD, SUTHERLAND & CO., INC., bunkering contractors for coal and oil, issues the following compilation of recent quotations on bunker coal in foreign ports as an indication of current prices and showing the downward trend of practically all quotations. The figures are subject to change or withdrawal without notice.

Adelaide	44s. to 49s., according to point of delivery.
Aden	130s. Indian or South African from Feb. 1. 155s. American Coal from Feb. 1.
Albany, Australia	54s.
Algiers	75s. from Feb. 1.
Amsterdam	43.50 guilders.
Antwerp	75s. to 80s., according to quality.
Azores	100s., from Feb. 1.
Bahia	197s. 6d.
Bahia Blanca	140s.
Barbados	110s. from Feb. 7.
Batavia	35.50 to 66 fl. according to quality and point of delivery.
Bermuda	$18 from Feb. 1.
Bombay	37.4 rupees.
Bordeaux	No coal available.
Brisbane, Australia	17s., 11d. to 24s., 1d., according to quality and point of delivery.
Brixham	90s. Welsh coal.
Buenos Aires	135s.
Cairns, Australia	64s.
Cape Town	75s., to 82s., 6d., according to quality.
Cardiff	50s. to 55s., according to quality
Colombo	85s. 3d., to 92s., 9d., according to quality.
Constantinople	125s., Welsh or American coal. 85s., Turkish coal.
Curacoa, D. W. I.	$20.75.
Dakar	122s., 6d.
Dartmouth-Portland	77s., 6d., Welsh coal.
Delagoa Bay	67s., 6d.
Dover	70s., Kent coal.
Fowey	77s., 6d.
Fremantle	50s.
Gibraltar	75s.
Glasgow	55s., to 56s.
Gothenborg	86 kr.
Grimsby	52s., 6d.
Hamburg	85s., Durham coal. $17, American coal.
Havre	No coal available.
Holtenau	85 fl.
Hook of Holland	43.50 guilders.
Hull	52s., 6d.
Karachi	24 rupees.
La Plata	135s.
Las Palmas	95s.
Leith	54s. to 56s., 6d.
Liverpool	55s. to 57s., 6d., Welsh coal.
London-Gravesend	75s., North Country coal. 91s., 3d., Welsh coal.
Madeira	111s.
Malta	110s.
Mauritius	140s.
Melbourne	39s. to 42s., according to point of delivery.
Montivideo	135s.
Newcastle, Australia	26s.
Newcastle, U. K.	42s., 6d. to 50s.
North of Scotland	No coal available.
Oran	85s.
Padang	40.64 fl.
Pernambuco	197s., 6d.
Plymouth	75s.
Port Kembla	30s.
Port Natal	71s. to 72s., 6d., according to quality.
Port Pirie	39s., 6d. to 41s.
Port Said	100s. net.
Pulo Laut, S. E. Borneo	35.56 fl.
Richboro	72s., 6d., Kent coal.
Rio de Janeiro	180s.
Rosario	140s.
Rotterdam	42 guilders.
St. Lucia	110s.
St. Thomas, V. I.	109s.
St. Vincent, C. V. I.	97s. 6d.
Santos	182s. 6d.
Singapore	110s., Japanese coal. 130s. Australian coal.
Sourabaya	Fl. 35.56 to 66 fl., according to quality and point of delivery.
Southampton	77s. 6d.
Swansea	50s. to 55s.
Sydney, Australia	32s.
Sydney Harbor, Australia	25s., 3d.
Teneriffe	95s.
Townsville, Australia	54s. to 64s., according to point of delivery.
Trinidad	109s.

Canada's Pacific Ports to Install Bunkers

THE value of coal bunkers to a seaport is a subject prominently before the three chief Canadian Pacific coast cities at present. Prince Rupert, the most northerly railway terminal, has taken the lead. Bunkers are to be constructed at that port and the enterprising citizens are being backed by both the Dominion Government and the Canadian National Railways. Victoria has extensive docking facilities, recently completed, which thus far have been used scarcely at all. The Board of Trade of the city believes that coal bunkers at the ocean docks would bring mercantile business, and Victoria, therefore, is stepping in behind Prince Rupert. Public opinion is strongly behind the enterprise.

To Prince Rupert, situated hundreds of miles from the coal mines of Vancouver Island and Alberta, extensive and modern fuel-storage accommodation will be invaluable. For Victoria, almost within a stone's throw of both the Island mines and the channel of North Pacific Oriental shipping, bunkers would be a business getter, Vancouver, always a trade rival of the provincial capital and likewise a port and in point of volume of business the most important Canadian centre of the coast, also is in line for bunkers, so that it may be said that western Canadians are awakening to the vital importance of coal, not only in a strictly limited industrial sense but as the propelling force in trade.

Canadian Steamships to Use Coal for Fuel; Boom Likely in Vancouver Coal Field

IT IS difficult to conceive of a more important announcement in point of its effect on the coal mining industry of Vancouver Island, B. C., than that made recently by J. M. Savage, general manager of the Canadian Collieries (D), Ltd., that a contract has been entered into by his company to supply the Canadian Pacific Railway Co. with 25,000 tons of coal per month for use on the company's transpacific and coast steamships. The coal is required almost immediately, as many of the vessels already have been converted from oil burners to coal burners and the bunkering will be carried out either at Ladysmith or Union Bay, at both of which places are facilities for the shipment of the fuel.

If the predictions of those in touch with the situation may be relied upon, a condition has arisen that assures a market for much more island coal than is involved in the contract referred to. The statement is made that at least 70,000 tons per month will be wanted in addition to that which the colliers have been supplying in the last few years. In support of this it is pointed out that the Canadian National Steamships and the Canadian National Railways both will require fuel and that the steaming coal of the British Columbia coast fields has been found to be most suitable to their needs.

Some conception of what this means may be gained when it is known that the Canadian National Steamships soon will have five or six vessels plying the Pacific Ocean and that it is likely that the Canadian National Railways will use the product of the island on their locomotives. The latter assertion is founded on the knowledge that the coal of the Herewood Mine, Canadian Western Fuel Co., Nanaimo, has been tested on the railroad from Prince Rupert to the British Columbia boundary, with splendid results. Having these facts in mind it would appear safe to say that much more island coal will be sold in 1921 and that the fields have before them a period of unprecedented development.

After all, however, this improvement in market conditions has been gradually coming for some time. It is manifest in the returns as to output from the various collieries of Vancouver Island covering the last four or five months. When the official statistics are available it will be found that production from the fields in question has been better in 1920 than in any previous year since 1912. And yet there is at present the anomaly of one of the island collieries, the Pacific Coast Coal Mines, Ltd., practically closing down. This company, however, has been depending on the domestic market and the mild weather experienced on the coast thus far this winter perhaps explains why the demand from this source has not been better maintained. The company also is handicapped because of lack of tidewater facilities for the bunkering of large vessels. No doubt its difficulties will be overcome because it possesses some fine coal-bearing lands, a producing mine, and with coal again about to assume undisputed sway as king, may be depended on soon to be on a producing basis.

Minority Report Says Calder Committee's Conclusions Are Founded on Hasty and Incomplete Survey

THAT there is division in the Calder committee itself in the matter of regulating the coal industry is evidenced by a minority report submitted by Senator Edward J. Gay, of Louisiana, one of the members of the Committee on Reconstruction and Production. The minority report was delayed because of the rapidity with which the inquiry into the coal industry kept changing. Senator Gay's report, as presented to the Senate Feb. 17, follows:

"It seems necessary that a minority report be submitted from the Committee on Reconstruction and Production with respect to its recommendations regarding the coal industry. So as to treat the question more comprehensively I have taken the liberty to dwell somewhat on developments since the appearance of the majority report.

"I understand that the committee has not attempted to make a complete and thorough study of coal production, distribution and sale, but has arrived at its conclusions from a necessarily hasty and partial survey of the subject. Since the committee, nevertheless, has made certain definite recommendations with regard to the coal industry, based upon this incomplete record, I am constrained to make a brief statement of the facts in this matter as I understand them. My information is based in part upon the record of the committee's hearings, upon the thirty-fourth annual report of the Interstate Commerce Commission, submitted to Congress under date of Dec. 1, 1920, and upon various official reports of the U. S. Geological Survey and the U. S. Bureau of the Census.

"I find that the Interstate Commerce Commission in the report just referred to, pages 13 to 23, gives a brief and convincing statement respecting coal production and shipments during the past year and the reasons for the special service orders of the commission issued to relieve the emergency. From this report and from the reports of the U. S. Geological Survey it is apparent that in the spring of 1920 there was a severe shortage in the stocks of bituminous coal and in current shipments, due principally to the bituminous coal miners' strike of November, 1919, and to the switchmen's strike which began in April, 1920.

Lack of Stocks Made Large Production Necessary

"The Interstate Commerce Commission's report on page 16, says: 'The year 1920 began with no substantial coal stocks, and the demand for bituminous coal could be met only by large production. Moreover, coal production this year has been considerably retarded by strikes and by the wide dispersion of coal-carrying equipment. Not only was there an urgent call for unusually large amounts of coal on the part of the railroads, public utilities and industries generally, but it soon became apparent that unless we took special measures to insure the movement of coal to certain sections the coal which must go into those sections would be forced through unusual routes, with loss of efficiency of equipment and further congestion of already clogged gateways. We felt it to be our duty to avoid such effects by adopting appropriate means within our emergency powers to insure a prompt, steady, and economical use of transportation facilities in the movement of coal.'

"The commission then goes on to explain the various service orders which were issued and which were effective in increasing the current weekly shipments of bituminous coal from 9,000,000 tons per week to 12,000,000 tons per week and which brought about the necessary shipments to Lake Erie ports for transshipment on the Great Lakes to the Northwest during the period of open navigation in the summer and early fall, and by water to New England, at the same time that the general increase in shipments permitted the upbuilding of necessary reserves of coal against winter demands as well as the current demand. The commission further reports that these special service orders were suspended one by one as quickly as conditions permitted until they have finally all been suspended with one exception. The cancellation of these orders became effective as soon as the commission was convinced that the emergency had passed and that the movement and supply of coal was sufficient for the public need.

"It is clear to my mind from the evidence submitted to the committee that the bituminous coal industry is peculiarly dependent upon a current, regular and adequate transportation service from the mines to the consumer. At the beginning of 1920 the coal industry was in peculiar need of the services of the railroads because the mines were called on to supply a deficit of some 20,000,000 tons in the country's stock pile. This deficit was created by the bituminous coal strike. Distribution then was hampered by the switchmen's strike in April, May and June and July of 1920. It seems evident that insufficiencies in the service or interruptions in transportation are the chief causes of the difficulties which consumers have had during the past summer in rebuilding stocks.

"The provisions of the Esch-Cummins law provide a practicable means of meeting such emergencies through action of the Interstate Commerce Commission. It is apparent that a very severe test of the ability of the commission to deal with such emergencies in coal supply, due to transportation failures, has occurred during the past summer. The results are adequate proof of the wisdom of that legislation. Therefore, in my judgment, little further legislation for that purpose seems necessary at this time. Moreover, if that emergency power in the hands of the Interstate Commerce Commission is used to prevent the recurrence of serious shortages, I am satisfied that consumers may confidently expect to obtain sufficient supplies of bituminous coal without serious difficulty and without the necessity of paying exorbitant prices, especially if steps are taken to insure equity in distribution.

No Combination to Boost Prices or Limit Output

"I reach this conclusion in view of the fact that the evidence before the committee shows without question that the bituminous mines of the United States now in operation are equipped and prepared to mine and produce a total tonnage largely in excess of total requirements and that the committee appears to have found no evidence which to my mind is proof of any combination among the producers of bituminous coal either to maintain prices or restrict production. It seems evident that with the large number of such producers and the numerous areas in which such coal is produced very active competition prevails in the marketing of bituminous coal, and if sufficient transportation is available to keep current shipments up to current needs this competition in the open market will keep prices at a reasonable level.

"I am not defending or excusing the high prices which many consumers paid for bituminous coal during the summer and fall. There were sales at the mines at prices as high as $10 or $15 a ton. But the great bulk of the coal continued to move under contract at much lower prices, so that, as the evidence developed by the committee showed, the average price of coal at the mine for the first nine months of the year was $3.47.

"Without question a serious shortage of coal such as existed would afford opportunities for speculative buying and selling of coal, with consequent high prices, just as such a situation would present similar conditions in respect to building materials, agricultural products or any other commodities which are bought and sold in the open market. An occasional occurence of that kind, however, in my view does not justify any far-reaching plan of governmental regulation or control of the production, sale and distribution of coal or of any other commodity produced and sold generally in interstate commerce.

"I am now advised, and the evidence submitted to the committee shows, that with the satisfaction of demand

and the return of production and shipments of coal to normal conditions, prices have rapidly dropped to, and are now steady, at normal levels, in fact in many instances at figures below costs of production.

"As to anthracite, the general household fuel of the East, I understand that the deposits of anthracite are limited; that mining at greater depths and the extraction of coal from thinner deposits are attended with continuing increases in cost. It seems to me, therefore, that anthracite is becoming more and more a luxury fuel. The capacity of the mines is limited and it is not probable that production in the near future will be increased greatly. During the past year the output of anthracite was curtailed first on account of the switchmen's strike and later by the anthracite miners' 'vacation' in September. It is practically impossible for the anthracite operators to make up the loss in tonnage resulting from those two strikes. The high prices on much of the anthracite sold this year have been felt by the householder, who has in consequence derived his whole impression of the shortage from the anthracite situation, confusing it with that in the bituminous industry.

QUESTIONS AUTHORITY TO REGULATE COAL INDUSTRY

"With respect to the committee's findings, I very much favor the procurement of full statistics as to production and consumption of coal, but I do not believe that a Federal bureau should be given such powers that individual firms are required at any time to spread their books before them and acquaint them with all of their business secrets.

"With respect to the recommendations embodied in Senate Bill 4828, introduced by the committee, I cannot agree to the provisions for sweeping and drastic Federal regulation of the coal industry and interference with the ordinary process of business in connection with that industry. I do not believe that anything in the present or prospective condition of the coal industry warrants any such measures, and I doubt seriously whether Congress has any such authority to control and regulate business as is here attempted. I certainly am not aware of any peace-time authority which Congress has to determine prices of commodities or to authorize the executive department to fix and regulate prices of commodities or margins of profit whenever an emergency shall be declared to exist.

"There is no telling what interpretation will be placed upon the term 'emergency.' There would be a great temptation for consumers—particularly large consumers—to interpret the term very liberally, perhaps at any time that the price did not suit them. If adopted, I believe it would prove the entering wedge for a widespread system of attempted Federal regulation of the lumber, wheat, cotton, oil, metal mining, iron and steel manufacturing and other industries, which is repugnant to every principle of American institutions since the foundation of our government.

"The bill is seriously in error in exempting from any of its provisions the smaller operator and jobber. It has been conclusively shown by the experiences of last year that it is the newcomer in the business, without reputation to protect or business future to guard—he who in large numbers is attracted by the possibility of temporary gain—who is largely responsible for the spectacularly high prices and for the juggling of shipments. I am convinced that any measure that does not penalize heavily the so-called 'snowbird' has no possibility of benefiting the ultimate consumer of coal.

"I recognize that one of the difficulties in the coal situation is lack of proper distribution. I believe we can legislate in an entirely safe manner so as to provide for proper distribution when it becomes necessary to give priority to coal in the matter of transportation. The Interstate Commerce Commission did this as far as it could in an indirect manner. I see no reason why we cannot confer power to deal with distribution in a direct way when it becomes necessary to give coal transportation priorities. The very object of this priority is to protect the consuming public. We should see that they get this coal rather than allow the producer to sell it for the high dollar.

"I do not agree with some theorists who regard it as necessary that we shall perpetuate regulations made necessary by the greatest war in history. Regulation of price is so intricate and so ramified that an effort at its control undertakes a task of unparalleled magnitude. The wisest of administrators cannot prevent widespread inequities.

"I oppose the licensing feature of the bill which is one of the outgrowths of the committee's activities. This legislation will establish a precedent. I do not want the business men of America to be forced to come to Washington, hat in hand, to prove to some bureau employee or official that he has been carrying out the technical and voluminous regulations which likely will be promulgated if this legislation should be placed upon our statute books.

"In the present state of the public mind there would be few tears shed if every coal operator and dealer in coal were forced to take out a license and be compelled to wrestle with departmental red tape for the rest of his life, but soon this precedent will be followed and the legislation extended to include other commodities. Just because coal happens to be in disfavor with the public at this time and because there is a demand for reprisals, we should not take this long stride toward the nationalization of the coal industry just because it would bring forth some applause from the consumers. Not all consumers have the advantages that we have of obtaining a bird's-eye view of this situation. We must not inflict on the vast majority of coal operators and dealers, who are honest, the blight of Federal regulation because some of those engaged in this industry took advantage of an economic situation to profiteer. If the Congress will take steps to make it possible for the railroads to provide cars to handle reasonable peaks of shipments or take steps to influence a more equalized movement of coal throughout the twelve months of the year, shortages will be few and far between.

"Here we have the spectacle of an effort to put through hurriedly a great departure in industrial control—a matter as important as the Sherman law and entirely comparable with railroad regulations, since the annual output of coal is worth billions of dollars—with the most superficial investigation on the part of Congress."

P. B. Heilner Dead; Was Vice-President of Lehigh & Wilkes-Barre Coal Co.

PERCIVAL BUTLER HEILNER, for twenty-eight years general agent and vice-president of the Lehigh & Wilkes-Barre Coal Co., with offices in New York City, died at the Garden City Hotel, Garden City, Long Island, on Feb. 7. He was the son of the late M. G. and Sylvina Butler Heilner; a great-grandson of Colonel Zebulon Butler, of the Revolutionary Army, and a descendant from Elder Brewster, a Pilgrim of the Mayflower. In the early seventies Mr. Heilner was associated with his father, they doing business under the firm name of Heilner & Son, which firm still survives. Many coal men from New York and other cities including Philadelphia, Baltimore, Scranton and Wilkes-Barre attended the funeral services at the Church of the Incarnation, New York City, on Feb. 9.

New England Rate Hearing on March 3

FURTHER hearing will be held on Thursday, March 3, 1921, in Room 401-C, 143 Liberty Street, New York City, in compliance with the request of interested parties for additional time to make investigation in connection with the carriers' proposals covering readjustments of rates on anthracite and bituminous coal to points on the Boston & Albany R.R., Boston & Maine R.R., New York, New Haven & Hartford R.R., Maine Central R.R., Bangor & Aroostook R.R. and Central Vermont Ry., originally heard on Feb. 3, 1921.

PRODUCTION OF COAL AT 189 mines in Indiana during the week ended Feb. 5 is reported as 405,358 net tons, as compared with 453,115 tons the week preceding. These mines operated 44.91 per cent of the full time, with lack of market responsible for 46.93 per cent of time lost. Of the remaining causes of lost time mine disability was responsible for 6.33 per cent and labor troubles and railroad disability for 1.83 per cent.

Changes in Coal Control Bill Leave Little of Original; Adoption at This Session Now Doubtful

THERE is no indication, as this is written, when the coal hearing before the Senate Committee on Manufactures will be terminated. Senator La Follette, the chairman, indicated Feb. 11 that it still might be possible to obtain legislation at this session. He also stated that the hearings would not be cut off until a well-rounded record has been made. He pointed out that the committee is interested in making a permanent record of the situation during the recent coal shortage, not alone for its own use but for use at any time that the question may come up in the future.

There are some who believe that all hope has been given up of obtaining legislation at this session. They rather expect to see the hearings go on until nearly the close of the session. It is understood that the original Calder bill has been made over almost daily since the hearings began, in the hope that the hearings could be terminated and a bill reported without delay. Nearly every day has seen something brought out which has suggested a change in the bill. It is believed now that there is little left of the original bill, except the fact-finding power. Dr. Harry A. Garfield made such an impression with his statement that it is fundamentally wrong to have the same agency which finds the facts draw the conclusions that some believe the idea will be reflected in any bill that may be reported.

Most of last week was devoted to discussion of the retail coal situation in Washington. Charges were made that Washington retailers attempted to maintain higher prices than were justified by market conditions and that pressure was brought on retailers who cut prices. Only one side of the story was told, however, as the representatives of the Washington retailers are still to be heard.

Samuel Gompers Strongly Opposed to Regulation

Samuel Gompers, president of the American Federation of Labor, expressed his unequivocal opposition to the Calder bill and to any other type of regulatory legislation. He expressed much apprehension as to the interpretation of what constitutes an emergency. If the bill is to be presented at all, he insisted that it contain a provision distinctly specifying that it shall in no way interfere with the rights of labor. Mr. Gompers made a lengthy presentation of the present labor situation, much of which had no direct relationship to the bill under consideration. His views, however, were received with the greatest deference, not only by members of the committee but by the large attendance of spectators, who filled all available space in the committee room.

Representative Huddleston, of Alabama, who has lost no opportunity in recent years to berate the coal operators, appeared before the committee and began with the charge that the National Coal Association had been engaging in price fixing. Under a severe cross-examination by Senator Reed, modifications of that and other statements repeatedly were made by the witness until there was little left of the original charge. It developed that his conclusion in regard to price fixing was based largely on the fact that the various meetings under the auspices of the National Coal Association brought the operators together and tended to harmonize prices. Mr. Huddleston did convince the committee that he has a very intimate knowledge of the situation in the Alabama field. He advocated a price differential so as to offer an inducement for the movement of coal during the months that cars are available. He stated that he favors government ownership of railroads, under which he believes there would be less juggling of car supply.

Senator Gronna objected to the practice which makes it difficult, if not impossible, for consumers to club together and buy a carload of coal direct from the producer. In the Northwest, he declared, coal can be bought only through a retail dealer. Senator Reed's suggestion that it is impossible for ultimate consumers to buy shoes direct from the manufacturer and Senator Fernald's explanation of the necessity of a sales agent ended any further discussion of that phase of the subject.

In looking back over the list of the witnesses who have appeared in favor of the Calder bill or of some of its provisions, the point is made that its support has come from those who have only a theoretical knowledge of the coal business. Senator Calder himself is a contractor. Most of his knowledge of the coal situation has been acquired since he undertook an investigation of the housing situation. Chariman Thompson, of the Federal Trade Commission, until recently was an assistant Attorney General. George W. Elliott, who evidenced some friendliness for the bill, is the representative of the public utilities and naturally sees in the bill an asset to these utilities. Dr. Garfield and Dr. George Otis Smith, who made the best witnesses for the Calder bill, gave it only qualified endorsement. Their deductions are open to the criticism of being theoretical and academic, as neither has had any first-hand experience in the coal business and in fact neither has laid any claims to being a coal specialist.

Senator Reed Objects to Hearsay Evidence

Edgar Wallace, of the American Federation of Labor, created a racket by bringing in the name of Charles Keith of Kansas City in connection with Alex Howatt and the Kansas mine strike. Senator Reed objected to hearsay evidence reflecting on Mr. Keith and insisted that all parties to the case be heard by the committee. "The committee will decide that," said Senator La Follette, chairman. "Of course," said Senator Reed, "but I object to hearsay evidence and insist that the parties to the case all be called instead of reflections being made by one witness who was not in that region and has no first-hand knowledge of the case." Chairman La Follette said the committee would later decide whether it would go into this question.

Mr. Wallace sought to refute the charges of inefficiency of labor made by Harry N. Taylor of Kansas City, but Senator Reed insisted he was not qualified to discuss the matter, as he had not, on his own admission, been in Kansas since 1892. Mr. Wallace made a defiant challenge to Congress to pass anti-strike legislation, declaring that labor would strike in defiance of the government if such legislation was enacted.

Mr. Wallace said the mine workers' union had no objection to the Calder bill if the rights of the men to meet the operators and settle upon wage scales were preserved. Otherwise some third party who was not acquainted with the industry might juggle the market and make such a division of cost of coal and wages as would be disastrous.

L. S. Trigg, economist, associated with W. Jett Lauck, of Washington, D. C., gave statistics on profits of 28 bituminous companies, saying their profits per ton had advanced from 15c. to 48c. in the periods between 1912-15 and 1916-19. He reviewed the arguments of Mr. Lauck before the Anthracite Coal Commission of last Summer. He was forced to admit under questioning by Senator Reed that the independent anthracite coal companies must have a higher price than the railroad coal companies, and also that the anthracite market is pretty generally stabilized.

Mr. Trigg insisted that anthracite miners' wages had not kept pace with war prices. He charged that overcapitalization in the anthracite industry resulted in high prices but low wages, and that losses of the coal companies were written into high transportation costs. He charged that the enormous fixed charges in anthracite resulted in high rates and enabled the anthracite roads to pay higher dividends than other railroads, and that these fixed charges were concealed from the public. He insisted that the anthracite industry could pay higher wages without increasing the cost of coal to the public. He asserted that the anthracite industry was knitted into a monopoly, caused by

agreements, conferences and interlocking directorates under control of a New York banking combine centering around J. P. Morgan and the National City Bank, and that dividends were reaped on watered stock. He concluded that anthracite profits must not be looked for in the coal companies but in the railroad companies, sales companies and the controlling banking combination.

CALLS RAID ON ASSOCIATION OFFICE COARSE WORK

There was a tense moment in the hearing before the La Follette committee when Senator Calder stepped in the room, during the discussion of the raid on the National Coal Association's offices, and Senator Reed said to him. "I have no hesitation in saying that if statements which have been made to me are true, somebody did some pretty coarse work down there; but I do not charge that to you, Senator."

To this Senator Calder replied: "There was no coarse work done. It is possible that this committee or the country would not have known that this association had been collecting $500,000 a year for the purpose of advising the country on the coal situation; that it paid $100,000 a year for counsel or that the president of the association had sold coal to the Government at prices from $7 to $15 a ton that cost only $3 at the mine. These facts came out only because we got their papers."

Prior to that Senator Calder in referring to the raid had stated that "Perhaps some of our men may have been overzealous." The reference to the transaction between Colonel Wentz and the War Department led Senator Reed to state that "It looks to me like a very nasty piece of business, from what I have heard."

This caused Mr. Morrow to say "The prices at which Colonel Wentz bought that coal for the War Department were published by the National Coal Association in its paper in September or October." This was after Senator Calder had stated "We got the first information concerning that from examining Colonel Wentz's private letter file in the National Coal Association office."

The inquiry into the raid of the National Coal Association's offices did not meet with the entire approval of the chairman of the committee, Senator La Follette. In that connection he said: "I do not think it is material to the inquiry before this committee what the Calder committee did in procuring the records, which have not been presented to this committee and are not in evidence before it. I do not believe it is within the province of this committee to put the Calder committee on trial here."

Senator Reed expressed himself in this connection as follows: "So far as I am concerned, it is not a matter of trying the Calder committee or of trying their agents for overzealousness, but the witnesses of the National Coal Association have been challenged constantly to say whether there are in their possession certain documents. They have answered repeatedly that their files were gone through, papers were taken away, that they have no check on those papers and that they, therefore, cannot answer positively. The sole point that interests me today is the question of the inability of these gentlemen to say what papers were taken. If they had been permitted to be there and check out the papers that were taken they could answer, but they had no list of them."

Senator Reed, in discussing the subpoena which was served on the National Coal Association when its offices were visited by representatives of the Calder committee, said: "As I understand it, there was no subpoena describing books and papers; it simply read, 'All books and papers,' or something of that kind. We all know that that kind of subpœna is void."

At another point Senator Reed said: "We must start with the presumption that attends everybody in America. A man is presumed to be acting innocently and within the law until the contrary is shown. However a violent strain it may be upon that principle, I am inclined to indulge it even in regard to a coal man, as I am required to indulge it in regard to a man charged with murder. It is in evidence here that the Coal Association had some meetings. The directors also had some meetings. The minutes of those meetings were kept, but the query came 'Are those full minutes? Are they stenographic reports?' The innuendo was very broad and inescapable that if they were not the full stenographic reports, there were sinister reasons for suppressing those parts that did not appear.

"There was innuendo again because the minutes were sent to the attorney and he corrected them, that that indicated they were sent to him for the purpose of revision and striking out anything that might appear to be bad or wicked. I do not hold a brief for these coal men. If they have been engaged in any combinations, I will go as far as will anyone to discover it. I will go just as far to insist on their prosecution. But they are entitled to put in their evidence. I am going to proceed on evidence and not on suspicion. The sole evidence introduced thus far about these executive meetings of the National Coal Association is that they dealt with nothing except such questions as related to their internal concerns, such as the salaries of officers and matters of that kind."

Purchasing Agents' Fuel Committee to Meet; Seek Standardized Coal Contract

W. L. CHANDLER, of the Dodge Sales & Engineering Co., Mishawaka, Ind., president of the National Association of Purchasing Agents, has called a meeting of the Fuel Committee of that organization to be held at the William Penn Hotel at Pittsburgh on Feb. 18 and 19.

The purpose of this meeting is discussion in order, if possible, to adopt a fair, equitable and inviolate form of contract governing the purchase and delivery of coal. There will be about thirty-seven members of the Fuel Committee present, each representing a local association. Ernest H. Hawkins, of E. I. duPont de Nemours Co., Wilmington, Del., will act as chairman of the committee and of an advisory council of five members of the Fuel Committee.

The Fuel Committee is desirous of arranging some form of contract which may be standardized, and at a later meeting the Advisory Council will meet with representative coal operators, distributors and purchasers to receive their advice and co-operation relative to the provisions of the contract as worked out at this meeting.

Will Make No Check-Off in Indiana for Alabama and Mingo Strike

COAL operators of the Indiana bituminous fields will not check off on the mine workers' payrolls the assessment ordered by the United Mine Workers of America for the striking mine workers in West Virginia and Alabama, according to an announcement made by William Blakely of the Indiana Bituminous Coal Operators Association. Mr. Blakely said the operators were under contract with the miners to check off only the dues of the organization and the wages of the checkweighman, and therefore would not check off this additional assessment. It is understood that the United Mine Workers of America called on the operators to make the collection for the union, checking the sums demanded off their employees' pay. No trouble is expected from the mine workers.

U. S. Shipping Board Makes Third Call for Coal Bids

HAVING rejected in their entirety the first bids submitted for bunker requirements for the next twelve months and having accepted one bid of the second lot, opened on Jan. 14, the Shipping Board has now advertised for bids for its remaining requirements, calling for tenders to be opened Feb. 28. The requirements with respect to these bids are understood to be essentially the same as those previously called for, with the exception that the total quantity has been reduced, because of the one bid accepted of Dexter & Carpenter, of New York, for 300,000 tons.

Navy Department Asks Bids on Coal Needs; To Be Opened March 8

SCHEDULES asking for bids for between 1,506,000 and 1,883,000 gross tons of coal for the navy for the ensuing year have been distributed among the trade, requesting bids, to be opened on March 8, 1921. The Bureau of Supplies and Accounts of the Navy Department states that the quantities of coal named in the schedules for the various points of delivery are merely estimates based on the past experience of the navy, and a stipulation is made that no contractor will be obliged to furnish in excess of these quantities, although he may have opportunity for so doing, and further that the navy will take at least 80 per cent of the amounts named in each schedule. For coal delivered at Hampton Roads, Baltimore, Philadelphia and New York the contractor will be relieved of all responsibility in the matter of payment for terminal charges.

Bids are called for on two schedules: one covering bunker coal at Charleston, New York, Brooklyn, Philadelphia, Baltimore, Washington, Alexandria, Indian Head and Hampton Roads, representing a total of more than one and a half million gross tons of high-grade semi-bituminous coal; the other schedule names twenty-nine stations of the navy scattered over the country for which requirements range from 200 tons for the naval air base at Rockaway Beach, N. Y., to 140,000 tons at the Great Lakes Naval Training Station, the needs of all twenty-nine aggregating 327,600 gross tons.

Bituminous coal having an analysis indicating quality lower than 3 per cent of moisture on delivered coal; 9 per cent of ash "dry coal"; 22 per cent volatile matter "dry coal"; 1.75 per cent sulphur "dry coal," and 14,300 B.t.u. "dry coal" will not be considered. Attention is directed to the fact that specifications are for analysis on the "dry coal" basis instead of "as received" basis. Coal for the naval training station at the Great Lakes is excepted from these requirements.

In order to compare bids as to the quality of the coal offered the navy will reduce the proposals to a common basis by merging all four variables—ash, moisture, heating value and bid price per ton—into one figure, the cost of 1,000,000 B.t.u. The adjusted price will thereby be arrived at and the navy will determine the cost of 1,000,000 B.t.u. It is interesting to note that the total requirements of the navy are for 72,377,768 million B.t.u.

Separate bids are asked on each item for 25 per cent of the quantity delivered between April 1 and June 30, 1921; 50 per cent of the quantity between April 1 and Sept. 30, 1921, and on the entire quantity between April 1, 1921, and March 31, 1922. Bids will be accepted on all or any part of each item.

Three forms of proposals are invited: one specifying that payment will be made on the basis of the price named in the proposals for the specified coal, corrected for variations in heating value, ash, and moisture from the standard specified in the contract, in accordance with a formula; the alternate method differing from the first only in that the determination of price by calculation from analysis will not apply, in which case payment will be made on the bid price per ton without deductions or premiums on account of chemical analysis.

All coal will be sampled at the time it is being unloaded from railroad cars, ships or barges, and the navy specifies in precise detail the method of sampling that will be followed.

Rule 33 of Tidewater Exchange Attacked By Members

PROTESTING against penalties assessed under Rule 33, which authorizes the Commissioner of the Tidewater Coal Exchange to impose a penalty of 10c. per ton a day upon all credits which were not dumped within forty-eight hours after notice to dump, a special committee representing members of the exchange appeared before the Executive Committee of that body on Feb. 10. The special committee was headed by W. R. Richardson, of the Philadelphia Export Co., who told the members of the Executive Committee that a number of the members of the exchange had organized for the purpose of having Rule 33 rescinded and had formed a committee because personal appeals apparently had no effect.

Mr. Richardson said the Executive Committee had exceeded its authority in promulgating Rule 33 in the first place. He said his company would resist payment of charges under the rule and that if the rule was not rescinded, he wanted it thoroughly understood that if any of the members of the Executive Committee by their acts forced him to lose money or embarrassed him, he would, if he had any legal claim in them individually, exercise that right. During his remarks Mr. Richardson read a brief prepared setting forth the committee's arguments against the rule. In the brief the committee says that the fundamental evil in the new rule, which cuts far deeper than the immediate pecuniary loss to the members affected, is that it destroys the confidence which members were entitled to repose in the governing authority of an association formed for the purposes enumerated. It stated that penalties assessed against some members have exceeded $45,000.

Charles A. Owen, chairman of the Executive Committee of the exchange, told the members of the special committee of members that the Executive Committee had discussed the rule many times in the effort to avoid unfair treatment of those who dumped their coal promptly. He said those protesting had forgotten the other members who have dumped their coal promptly and many of whom had told the committee that the rule was necessary if the exchange was to survive. He stated that the rule was established in a dire emergency.

Another speaker was G. N. Snider, chairman of the Advisory Committee of the exchange, who told what led up to the development of the rule and why it was considered fair, not only by whose who were in consultation in Washington, including railroad men, coal men and government men, but by the members of the Executive Committee of the exchange.

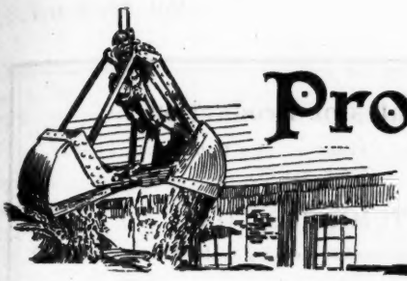
During the subsequent discussion Mr. Owen said that Rule 33 was adopted with the purpose of eliminating all speculation from the coal business at Tidewater. The reason behind that was the emergency demanded in the quick movement of cars, which if it could be brought about meant no more speculation or less speculation in coal.

At the conclusion of the hearing the Executive Committee met and adopted a resolution providing that a committee consisting of "the chairman of the Executive Committee, chairman of the Railroad Advisory Committee and the chairman of the Committee of Members protesting against the enforcement of the penalties and continuance of Rule 33," be appointed for the purpose of laying the whole situation as to Rule 33 before the Interstate Commerce Commission and obtaining its opinion as to the time when the national emergency which compelled the adoption of Rule 33 ceased to exist and that the committee report its recommendations to the next regular meeting of the Executive Committee.

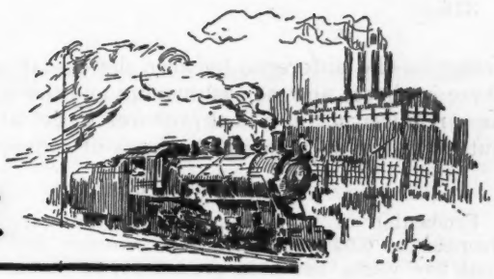
Allen and Baker Deny Allegations of Grand Jury Indictment

THE Federal Grand Jury of New York on Feb. 14 indicted Gibbs L. Baker, a lawyer of Washington, D. C., and Charles S. Allen on a charge of using the mails to defraud coal merchants by promising for payments of money to protect them from threatened indictments for violations of the Lever Act. Both defendants are accused of having defrauded, or of attempting to defraud, certain coal companies by the pretense of being able to influence officials of the Department of Justice.

Allen and Baker, in denying the allegations in the indictment, made the following statement: "Certain coal dealers under indictment have apparently induced Mr. Riley to befriend them and call them before the Grand Jury to aid them with a backfire. Obviously the men who have been indicted for their evil practices are only too glad to find a Special Assistant Attorney General to take their part and indict us as a smoke screen."



Production and the Market



Weekly Review

ROCK bottom has been reached within the past week both in the matter of soft coal production and prices. Production may in the next sixty days drop as low as 7,000,000 tons, but from now until May the average per week is not expected to go below 7,500,000 tons. Anthracite output is holding up to the best war records at nearly 2,000,000 net tons per week. We are still more than a million tons behind last year, figuring from April 1. The hole in the supply created by the hard-coal miners' vacation strike of last September has not yet been filled, despite the savings made possible by the warm winter weather. Every indication points to a repetition of the conditions obtaining in the early spring of 1919, when anthracite demand suddenly broke in February and was not resumed until April and May.

Trade Advised to Lay in Coal Supply

General surprise was created in the trade last week by a telegram sent broadcast by George H. Cushing, managing director of the American Wholesale Coal Association, practically announcing a general strike of railroad men in the near future and urging shippers of coal to warn the trade to lay in supplies at once. There is a general feeling that whatever basis Mr. Cushing may have for the forecast of such a railroad strike, his cry of alarm is too likely to be considered by consumers as a measure to stir up business.

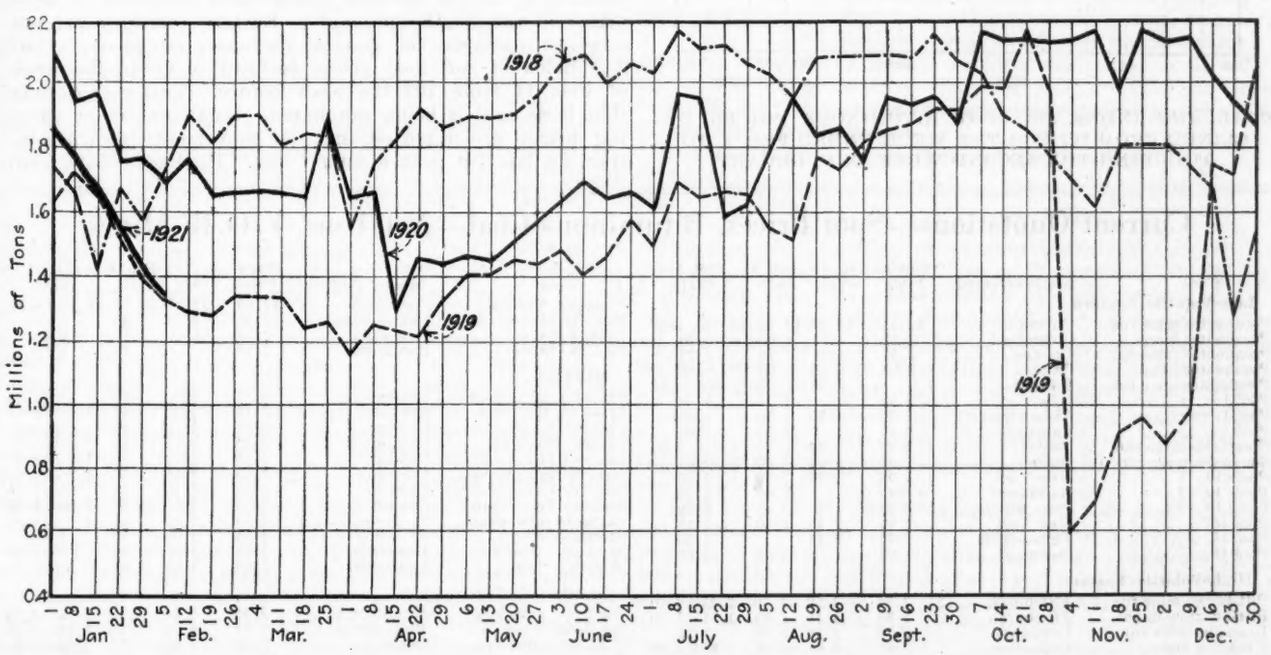
Beehive coke production continues to slump and is now but little more than half what it was a year ago. The independent steel interests, who buy most of this coke, are adopting strenuous methods to start business and are expecting coke producers to follow them in price cutting in their efforts to start things moving. Some coke producers are doing this; others are not and have closed down.

Conditions Presage Dull Coal Market

The immediate future holds nothing of excitement for the shipper of coal. It is generally conceded that recovery will be slow. Every circumstance makes for a dull coal market—mild winter weather, apathetic condition of industry, lack of railroad fuel demand and for foreign exports. Speculation is rife, of course, regarding what the year holds for the trade. Surmises range from that of those who declare that next winter will see recorded the "worst car shortage in history" to those who can see no permanent change for the better inside of eighteen months.

Consumers are registering disappointment because prices named to them on future business are above the present spot market as quoted in *Coal Age*. They must

Daily Average Production of Bituminous Coal*



*From weekly report of Geological Survey.

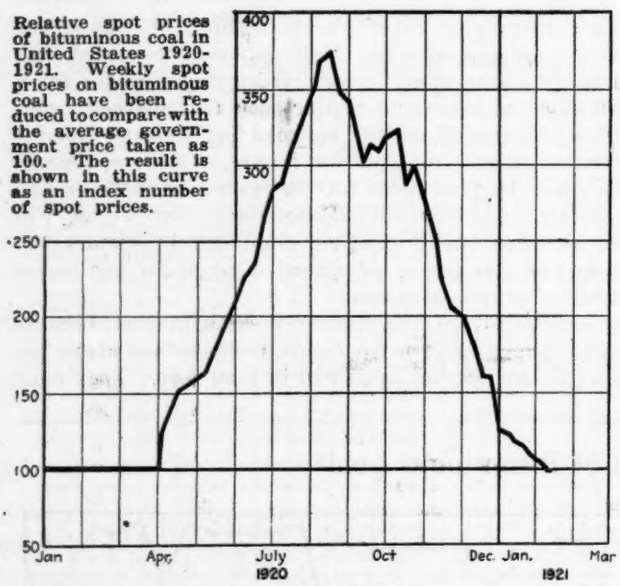
recognize the difference between day-to-day sales when there is almost no free coal moving and the simple business requirement of a coal producer to get at least cost out of his product on any business of consequence.

BITUMINOUS

Production of bituminous coal in the week of Feb. 5 dropped to 8,045,000 tons. The average decline for the past five weeks has been around 500,000 tons, but indications are that although the second week in February will show less than 8,000,000 tons of soft coal, bottom has been sounded. Production from April 1, 1920, to Feb. 5, 1921, was 467,700,000 tons, compared with an average of 455,000,000 tons for the same period in the three preceding years, which included the abnormal demand of two war years.

Fields operating on less than one-half full time are at present confined to Ohio and central Pennsylvania, all of West Virginia except Pocahontas, Northeastern and western Kentucky, and the extreme West. For the country as a whole "no market" losses represented 43.4 per cent of full time. Some fields, as Alabama and Colorado, lost less than 20 per cent on this account, and the Middle West, Illinois and Indiana, although working less than half time, reported to the Geological Survey around 40 per cent time lost because of no orders.

Relative spot prices of bituminous coal in United States 1920-1921. Weekly spot prices on bituminous coal have been reduced to compare with the average government price taken as 100. The result is shown in this curve as an index number of spot prices.



COAL AGE INDEX OF SPOT BITUMINOUS PRICES DECLINED FROM 102 FOR THE WEEK ENDED FEB. 8, TO 99 DURING THE SECOND WEEK IN FEBRUARY

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY
(NET TONS)

BITUMINOUS COAL

Total bituminous, including coal coked

	1921 Week	1921 Coal Year to Date	1920 *a* Week	1920 *a* Coal Year to Date
Jan. 22 *b*	9,184,000	451,123,000	10,464,000	386,875,000
Daily average	1,531,000	1,809,000	1,744,000	1,545,000
Jan. 29 *b*	8,566,000	459,689,000	10,594,000	397,469,000
Daily average	1,428,000	1,800,000	1,766,000	1,550,000
Feb. 5 *c*	8,045,000	467,734,000	10,010,000	407,480,000
Daily average	1,341,000	1,790,000	1,668,000	1,553,000

(*a*) Less 2 days' production during first week in April to equalize number of days covered for the two years. (*b*) Revised from last report. (*c*) Subject to revision.

ANTHRACITE

	1921 Week	1921 Coal Year to Date	1920 Week	1920 Coal Year to Date *a*
Jan. 22	1,819,000	73,633,000	1,757,000	75,670,000
Jan. 29 *b*	1,999,000	75,632,000	1,839,000	77,509,000
Feb. 5	1,985,000	77,617,000	1,451,000	78,960,000

(*a*) Less 2 days' production during first week of April, to equalize number of working days covered for the two years. (*b*) Revised since last report.

BEEHIVE COKE

Week Ended Feb. 5*a*	Week Ended Jan. 29*b*	Week Ended Feb. 7	1921 to Date	1920*c* to Date
1921	1921	1920		
231,000	248,000	432,000	1,274,000	2,409,000

(*a*) Subject to revision. (*b*) Revised from last report. (*c*) Less 2 days' production during New Year's week to equalize number of days covered for last two years.

In the Appalachian region production in the last week of January was but 4,878,000 tons, a decrease of 300,000 tons from the previous week and 1,600,000 tons less when compared with the weekly average in 1920. This important producing territory is now on a lower rate of operation than any other, for the reason that it depends on exports and industrial demand—both less now than the call for household fuel, which in the West and South shows the only life in the market.

PRICES

There is little point in discussing prices under present conditions. Slight upturns and general stiffening of spot prices in the South and middle Eastern territory did not serve to overcome the general decreases elsewhere. *Coal Age* index of soft coal prices declined to 99 in the week of Feb. 14 from 102 the week before. This means only that little coal is being purchased. Small orders at varying prices are reported, but no movement toward contracting has yet gotten under way. Producers have con-

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Coal	Market Quoted	Gov't Price	Jan. 13 1921	Feb. 8 1921	Feb. 15 1921†
Low-Volatile, Eastern					
Pocahontas mine run	Columbus	$2.35	$4.50	$4.00	*$3.75@4.00*
Pocahontas lump	Columbus	2.60	7.75	6.00	6.00
Pocahontas mine run	Chicago	2.35	4.25	2.75	2.75
Pocahontas lump	Chicago	2.60	5.70	3.90	3.90
Pocahontas mine run	Boston*	....	7.50	6.50	*6.00@6.25*
Pool 1	New York	2.35	....	3.50	3.50
Pool 1	Philadelphia	2.35	4.50	3.50	3.50
Pool 1	Baltimore	2.35	....	3.25	*3.00*
Clearfields mine run	Boston	2.95	3.00	2.75	*2.15@3.00*
Somersets mine run	Boston	2.95	3.60	3.40	*2.50@3.75*
Pools 10, 11	New York	2.95	3.00	2.50	2.50
Pools 10, 11	Baltimore	2.95	....	2.50	2.50
Pools 10, 11	Philadelphia	2.95	3.00	2.45	**2.50**
Pool 18	New York	2.95	2.25	2.10	**2.15**
Pool 18	Philadelphia	2.95	2.35	....	2.00
Pool 18	Baltimore	2.95	....	2.00	2.00
High-Volatile, Eastern					
Pittsburgh mine run	Pittsburgh	2.35	2.50	2.50	*2.25@2.50*
Pittsburgh sc'd. gas	Pittsburgh	2.35	3.15	2.85	2.75@3.00
Kanawha mine run	Columbus	2.70	2.70	2.40	**2.50**
Kanawha lump	Columbus	2.95	4.65	4.40	3.85@4.00
Hocking mine run	Columbus	2.50	2.50	2.35	2.25@2.50
Hocking lump	Columbus	2.75	4.50	3.85	3.75@4.00
Pitts. No. 8 mine run	Cleveland	2.35	2.75	2.50	2.25@2.75
Pitts. No. 8 lump	Cleveland	$2.60	$3.85	$3.75	$3.50@4.00
Pool 34 (54, 64)	Philadelphia	2.50	2.50	2.25	*2.10*
Pool 34 (54, 64)	New York	2.50	2.50	2.15	2.15
Pool 34 (54, 64)	Baltimore	2.50	....	2.15	2.15
Midwest					
Franklin, Ill., mine run	Chicago	2.35	3.00	2.75	2.25@3.25
Franklin, Ill., lump	Chicago	2.55	3.90	3.85	3.50@4.15
Central Ill., mine run	Chicago	2.35	2.50	2.15	*1.50@2.25*
Central Ill., lump	Chicago	2.55	3.75	3.15	*2.00@3.25*
Ind. 4th Vein, mine run	Chicago	2.35	2.75	2.20	1.85@2.50
Ind. 4th Vein, lump	Chicago	2.55	4.15	3.30	2.50@4.15
Ind. 5th Vein, mine run	Chicago	2.35	2.50	2.15	1.80@2.50
Ind. 5th Vein, lump	Chicago	2.55	3.85	2.80	**2.40@3.75**
Standard mine run	St. Louis	2.35	2.00	2.00	*1.90@2.00*
Standard lump	St. Louis	2.55	3.00	2.50	2.50
West Ky., mine run	Louisville	2.35	2.60	2.55	*2.10@2.50*
West Ky., lump	Louisville	2.60	3.90	3.65	*3.25@3.50*
South					
Big Seam mine run	Birmingham	2.45	3.10	2.95	**2.95@3.25**
Big Seam lump	Birmingham	2.75	3.45	3.50	**3.50@4.00**
S. E. Ky. mine run	Louisville	3.00	2.80	2.70	*2.50@2.75*
S. E. Ky. lump	Louisville	3.25	5.50	4.65	*4.00@4.75*

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advance over previous week shown in **heavy type**, declines in *italics*.

tinued to curtail output to meet the lessened demand. Were coal to be moved and loaded regardless of orders, it could not be sold without serious loss because of demurrage.

TIDEWATER

The only bright spot in the Tidewater market last week was scattered inquiries from South America. Several sales were reported to Greece also. Dumping at Hampton Roads held fairly steady at less than 400,000 gross tons per week. In January there was dumped at this port 1,625,000 net tons, of which half went as export cargo.

The total dumped over the Tidewater piers during January, as reported by the Geological Survey, was 3,745,000 net tons. Compared with December, this was a decrease of 566,000 tons, or 13 per cent, and was the smallest amount dumped since February, 1920. Shipments to New England were 639,000 tons, while exports were 1,138,000 tons, decreases, respectively, of 208,000 and 291,000 tons. Coal for bunkering increased 3,000 tons. Tonnage dumped was destined as follows:

Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Total
Coastwise to New England	183,000	51,000	73,000	332,000	.....	639,000
Exports..	.....	77,000	170,000	867,000	24,000	1,138,000
Bunker..	439,000	44,000	55,000	305,000	4,000	847,000
Inside Capes..	.....	199,000	82,000	31,000	.....	312,000
Other tonnage	706,000	.....	3,000	90,000	10,000	809,000
Total.	1,328,000	371,000	383,000	1,625,000	38,000	3,745,000

Movement to New England via all-rail gateways continued to decline from the high levels of the past six months. In the week of Feb. 5 shipments of 3,219 cars were reported, compared with 3,928 in the previous week and 2,572 a year ago. One of the striking features of the year 1920 was the unprecedentedly large all-rail movement of soft coal into New England of 12,200,000 tons, compared with 11,114,000 tons in 1918, the highest previous record.

ANTHRACITE

Hard-coal production continues heavy. The output during the week ended Feb. 5 was 1,985,000 net tons, or within 14,000 tons of the week preceding. Demand is holding remarkably well but buying is now confined to small lots to piece out the coal year. Because of good domestic distribution of the company product independent quotations are softer, although it looks as if the steady demand might enable them to maintain their 75c. margin over the company prices. Steam coals are fast becoming a drug on the market and prices are being lowered to push sales. Barley and rice continue to go into the storage yards and it will be many months before current consumption will again take up all the sizes. Buckwheat is quoted $2.75@$3; rice, $2@$2.25, and barley, 75c.@$1.

COKE

Beehive coke production continues to decline steadily. The output for the week ended Feb. 5 was 231,000 net tons. Spot prices are firm but there are indications that adjustments will be made on present contracts to encourage heavier coke consumption. No interest is shown in the new contract market, where offerings range: Foundry, $6.50, and furnace, $5@$6. The spot market is quotable at $6@$6.50 for foundry and $5@$5,50 for furnace.

Reports From the Market Centers

New England

BOSTON

Spot Prices Easier—A Few Purchases on Lookout for "Distress Coal"—Contract Prices Marking Time—Hampton Roads Market Uneven—Anthracite Deliveries Much Easier.

Bituminous—The week has developed no significant change in the spot market. Certain operating interests are still making strong efforts to place current output, but the volume of coal disposed of is light and varies little from week to week. Receipts at the Hudson gateways are remarkably well maintained, even though large users are cutting down what they are willing to receive on contract. Deliveries seem to be spread over a wider area than during January, due in part to pressure by shippers who have coal sold on last spring's basis.

Spot prices continue on about the same level as for the past fortnight. So-called "Pool 10" grades are easy purchases at $2.50@2.75 per net ton at the mines, the medium to inferior grades in proportion.

Here and there are mills and other steam-users who in spite of large reserve stocks are making sparing purchases on the market. "Distress coal" is sought by such buyers and the number of forced sales is rather surprising. It might be supposed operators would not take the chance now of mining coal without consignment, but the inducement is so great to keep the mines in operation that sacrifices are made willingly.

Contract market is hanging fire until there is real buying on the basis of twelve months' delivery. So long as industries are on 30@40 per cent time and reserves are kept at 60@90 days, there is little likelihood of any broad contract market, except in special cases.

Visible supplies at Tidewater piers have diminished since our last report. Coal running to the terminals has dropped to a marked degree. Mining has been curtailed in all districts and Tide shipments have suffered more in proportion than those by the all-rail route.

The Pocahontas and New River situation is even more irregular than a week ago. While slack coal has been quoted as low as $5, we have yet to hear of an actual sale of mine run at less than $6. There have been intimations, to be sure, that a somewhat lower figures would be expected, but the agencies realize that in trying to force coal on reluctant buyers they are but spoiling their own market. A few active buyers here have things in their own hands, however, and prices will continue soft until the large volume of coal on cars at Norfolk and Newport News and in transit is absorbed.

Current prices on bituminous at wholesale range about as follows:

	Clearfields	Cambrias and Somersets
F.o.b. mines, per net ton.....	$2.15@$3.00	$2.50@$3.75
F.o.b. Philadelphia, per gross ton.....	5.10@ 6.05	5.47@ 6.87
F.o.b. New York, per gross ton.....	5.60@ 6.55	5.95@ 7.37

Anthracite—Signs of better deliveries are multiplying. Both egg and stove are available in better volume, and those shippers who have "independent" coal to place are most anxious to please possible customers, both as to price and delivery.

Tidewater—East

NEW YORK

Lower Independent Quotations—Buyer Anticipate Spring Reduction — Bituminous Quotations Firm—Slight Improvement in Demand.

Anthracite — Increased receipts and lower quotations for independent domestic were the two features of last week's market. Increased production and moderate consumption, controlled by open weather conditions, have placed this market on a fair basis.

The dominant query nowadays is as to whether there will be a spring reduction in wholesale prices. Because of the nearness of April 1 buyers are holding off. It is expected that consumers will place early orders for next winter's fuel supply and ask that the coal be delivered as soon as possible, regardless of what operators and wholesalers may do.

Company coal is moving rapidly, most of the large operating companies being heavily booked for the balance of the coal year. Because of the continued demand there are those in the trade who believe independent coals will be a big factor in the spring trade.

Quotations for independent domestic eased off toward the end of the week. The average price for stove and chestnut seemed to be around $9.50. One lot of egg was offered at a trifle below $12 f.o.b. this harbor.

There has been no improvement in the steam situation. Demand was practically suspended and the coals are accumulating everywhere. Independents are trying to move their stocks at any cost with the result that company coals are not being moved rapidly.

Independent steam coals, f.o.b. mine, ranged about as follows: Buckwheat, $2.75@$3; rice, $2@$2.25, and barley, 75c.@$1.

Bituminous — While quotations remained practically stationary some optimists saw a slight stiffening in demand. There was apparently less coal on the docks, but this was accounted for by the refusal of shippers to send coal forward unless it was already sold. This condition was also noticeable in the small number of loaded boats in the harbor.

The movement to close contracts has not gained. Manufacturers and other large consumers fail to show any anxiety in this direction, apparently preferring to take a chance with lower quotations or else feeling that unless conditions suddenly improve they will be able to buy in the open market at lower prices than they could get on contract.

Commercial business was quiet, but there was a slight improvement in the demand for bunker fuels. Owners of manufacturing plants have not yet reentered the buyers' field. The improvement in industrial conditions reported from other sections of the country has not yet struck this section to such an extent as to affect the coal market.

Changes from last week's mine quotations are comparatively slight. Prices are shown in the Weekly Review.

Quotations f.o.b. this harbor ranged about as follows: Pool 1, $6.75@$7; Pool 9, $6@$6.50; Pool 10, $5.75@$6; Pool 11, $5@$5.25, and Pool 71, $6.40 @$6.85.

PHILADELPHIA

Anthracite Holding Despite Mild Weather—Pea Accumulates—Consumer Inquires for Spring Prices—Bituminous Inactive—Price Growing Firm—Chief Demand for Good Grades.

Anthracite—Demand keeps up remarkably, considering the mild weather that is prevailing. Shippers continue to make moderate deliveries of the most wanted sizes—stove and nut. Dealers report their trade is merely what comes in from day to day and the consumer is not particularly urgent about this, yet it is of sufficient volume to keep delivery equipment occupied. Pea coal is not particularly wanted by the trade and some dealers have especially large piles and a few of them are becoming a little anxious about running into the spring with too much of this on hand.

Inasmuch as the expected break has not as yet come to pass, the feeling grows that while coal may become more plentiful, there will not be a complete shading down in prices by the independents, as it looks now that the demand will be kept up right into spring. Of course the independents with top-notch figures will come down, but it looks as though even they might be able to maintain their 75c. margin over company prices.

The steam coal situation is causing producers the greatest amount of concern. Companies closely affiliated with rail lines are able to dispose of a good deal of their surplus and it is a fact that considerable bituminous is being displaced in this manner. Barley and rice continue to go into the storage yards and it will be many months before current consumption will again take up all these sizes.

Bituminous—So far as prices are concerned it would appear as though the soft coal trade was becoming stabilized. Most producers who have tried to stay on the market by reducing prices below cost have at last become convinced that cut prices will not find a market for the coal so long as consumption by industry is so light. For almost three weeks, at least among the more conservative houses, prices have been kept unchanged. The consumers are becoming more inclined to limit purchases to Pools 1 and 9. They are more concerned in quality than ever before and for this reason Pools 1 and 9 are frequently not so easy to get. Pool 10 is selling fairly well, considering the limited amount of spot business offering. Shippers complain that concerns with contracts expiring April 1 are shutting them off and buying the same grade of coal on the spot market at a much lower figure.

Pool 44 is offered at $1.85. In the illuminating gas coals, such as Pool 60 and 61, recent quotations have been $2.50@$2.75 for mine run, with ¾-in. lump at $3.25. The price on Greensburg gas has been $2 recently.

Coke—Foundry coke is quoted at $6 and furnace $5, net ton ovens. On sized coke, egg and stove are being offered around $6.50 and small stove and nut $6, with business still light.

BALTIMORE

Low-Priced Market Still Prevails—Demand Not Yet Improved—Export Movement Lighter — Hard Coal in Good Supply.

Bituminous—Prices are still below the reasonable level for many producers and the result is that not only has there been a failure to re-open suspended operations but additional mines have closed. Best steam coals are offering $2.75@$2.85, while high-class coal is offered in many cases at $2.50, net ton f.o.b. mines. Under such circumstances the call has lightened for intermediate coals, which had held at about the same price, and which did not go below 25c. off in any case. Poorest steam coals coming here are freely proffered $1.90@$2.

Local demand is very light. Most plants in this section seem pretty well stocked. Export movement continues to grow lighter. Only 21,230 tons cargo and 3,030 tons bunker coal were loaded for the first week of February. It is interesting to note that the final 1920 figures compiled by the Custom House for all coal loaded at Baltimore on foreign-bound carriers, including bunker coal, reached the figure of 4,396,772 tons. While prospects may not be as good, the actual total loading for the first five weeks of this year is slightly in excess of the figures for the same weeks of 1920.

Export handlers feel that a big revival is due some time after April 1. The Western Maryland tested out its new coal pier this week and is planning to put it in operation about the middle of March. It will be able to load 20,000 tons in a ten-hour day with a plan to later adjust loading on another side so as to double this figure.

Anthracite—Hard coal men are just now putting in their time filling small orders. The remarkably warm winter still continuing has cut this late demand greatly. Most dealers now have ample supplies and are buying carefully. They have not been able to figure definitely just what conditions in buying and selling will be next spring, to which they are looking forward cautiously. All want to be in best strategical position and not be caught with high-priced coal if there is any decided cut in freight rates or in sales basis at the mines which would force re-adjustment of selling prices here.

BUFFALO

Prospect of Railroad Strike Increases Buying — Prices Firmer — Anthracite Weakens with Light Demand.

Bituminous—About the only improvement noted is that some consumers are laying in a supply against the possible railroad strike. As a rule this strike talk has been regarded as a mere sellers' scheme for moving more coal. The suspicion on the part of consumers may be warranted or not. It has hurt the trade seriously anyhow.

It is still the small amount of coal selling that hurts the trade worst. Production continues to run down and it will have to decrease considerably more before the price will show much strength. The roads are moving freight at a rapid rate and idle cars are numerous. The consumer appreciates this, the shipper tries to, but does not succeed very well.

Some local industries are now starting up on half time, so that the number of idle men is not so great as it was, but there is no assurance that this pace can be kept till buying is good

again. The consuming public shut down on the high prices and it has not resumed yet, for a good many articles are still held up to pretty nearly war prices. As soon as they come down too the factories can start up safely.

Local opposition to the Calder bill has been active and it is believed that there is not much chance of its passing, certainly not this session. The bituminous market can perhaps be best shown by the quotation of Youghiogheny gas at $3.50, Pittsburgh and No. 8 at $3, all mine run at $2.75 and slack at $2.50.

Anthracite—Unseasonable weather is having its effect on the trade. No longer is there any consumer who fears that he will be unable to get a supply. All comers are promptly accommodated, so the people who commonly buy in small amounts are not asking for a cellar full of coal.

Jobbers who have been handling independent anthracite are not able to pay much more than a dollar premium and the prospect is that this will have to be dropped before long. Some of the standard anthracite companies are shading their prices a little, so the entire outlook is easy again.

Coke—Demand is light and is bound to continue so. This section is now making so much byproduct coke that the old beehive plants may soon be driven out of the market. The local capacity for byproduct is far beyond present consumption and quite an amount of it has not yet been used. The utilization of the gas, ammonia and tar products is easy near a city and it reduces the cost of the coke proper materially. Quotations are again lower, being $6.50 for 72-hour Connellsville foundry, $5.50 for 48-hour furnace, $4.75 for off-grades and stock and $6.30 for domestic sizes.

HAMPTON ROADS

French Price Restrictions—Dumpings Increase—Prices Unchanged.

Local shippers are not agitated over the recently effective regulation here of the French government that $9 per ton c.i.f. France shall be the maximum price of coal. Charter rates to France are now $4.50@$5, and this would leave consequently only $4.50@$5 for the price per ton here. This is considerably below the current price, but as no new contracts are now being made for shipments to France the order is not expected to result seriously.

Coal dumpings at the three local piers aggregated during the week ended Feb. 5 360,000 tons, an increase over the week before, and a gradual increase since the last of December. Pools 1 and 2 were selling $7@$8, and other pools about $6@$7. The price has remained practically the same for several weeks, with little activity in the market.

Only twenty-two cargoes cleared from this port during the week. No coal was shipped to France, Egypt, Cuba or Porto Rico. Cargoes cleared during the week were as follows:

Br. SS Rathwaite, for Denmark, 4,197 tons; Am. SS Virginian, for Alexandria, 8,942 tons; Br. SS Australind, for Wellington, 4,938 tons; Jap. SS Yayoi Maru, for San Antonio, Chile, 6,824 tons; Swed. SS Arcturus, for Sweden, 3,737 tons; Am. SS Minnesotan, for Alexandria, 7,530 tons; Br. SS Anglesea, for Argentina, 6,157 tons; Br. SS Swinburne, for Argentina, 4,818 tons; Nor. SS Cibao, for Kingston, 1,119 tons; Grk. SS Dionyssios Stathos, for Italy, 6,600 tons; Am. SS Masuda, for Valencia, 5,538 tons; Dan. SS Orneborg, for Havana, 2,520 tons; Am. SS Glen White, for Cristobal, 8,086 tons; Br. SS Delambre, for Buenos Aires, 4,313 tons; Nor. SS Erholm, for St. Georges, 1,616 tons; Br. SS Canadian Volunteer, for St. Thomas, 3,373 tons; Am. SS Plainfield, for Barbados, 3,280 tons; Jap. SS Scotland Maru, for Naples, 7,463 tons; Am. SS Ancon, for Cristobal, 10,099 tons; Br. SS Ventura de Larrinaga, for Rio de Janeiro, 6,760 tons.

Northwest

MINNEAPOLIS

Weather a Temporary Aid—All Coals in Keen Competition—Price-Cutting a Feature—Early Lakes Rush Seen.

February has had a little zero weather, which a few weeks ago, would have been most welcome to the coal trade. As it now stands it simply means a little extra rush of orders for a day or so, generally confined to fractional quantities, and does not hold out any hope of helping matters much. Temporarily, it will help clean up accumulations, so that there will be a little less pressure to dispose of demurrage coal.

But the market for the season of 1920-21 is practically gone beyond help. There may be a little aid now and then that will ease the situation, but there can hardly be anything sufficient to put any life into the market. The patient is simply dragging on until the end of the season with no hope of any real change.

A scramble to get from under is to be seen in the price situation on soft coal in particular. All-rail coal has been slipping a little at a time for some time past. Screenings have been almost given away, selling as low as $1.25 at the mine. Dock screenings have also gone down and have sold at a price at which they cannot be replaced—$5.50 at the dock. Hocking has been quoted as low as $8.25 at the dock and has sold at $8.

Of course, in the long run, no amount of price-cutting is going to develop any business. It may switch a little around from one source to another, but this usually washes out in the end, since the company losing tonnage makes extra efforts to get it back somewhere else. Sometimes it works like the dance called "Everybody change," but does not result in any more tonnage to anyone because of the general change.

Early preparations are probable to get coal forward to the docks before any great rush can set in on the mines from other centers. It seems unlikely that there will be any great rush this spring so that the docks will be able to commend all the early tonnage that they can get vessels to handle. There are those who fear that the Eastern mines desire to cut off their business to the Northwest. This seems quite unlikely. It is natural that they favor the trade nearest home, and which furnishes the greatest tonnage. But when tonnage is needed, the outlet to the Northwest will look very alluring if there is a slack run of business in the nearer markets.

As to opening prices for spring, the theory is that they ought to be based on present mine costs, which will hardly make much lower prices than are today being quoted, if as low.

MILWAUKEE

Market Extremely Dull — Anthracite Now Being Received by Rail — Coke Follows the Downward Trend.

With soft, spring-like weather, and the month of February half gone, the coal market could not be expected to be anything but dull and uninteresting. Dock supplies, which looked inadequate at the beginning of the winter season, now bulk formidably, and dealers are doing their best to reduce stocks before another Lake season opens.

Following the drop of $1@$2 in soft coal on Feb. 1 comes a cut of $1.25 in coke. All things considered, coke has been the highest priced fuel during the winter, having been firmly held at $17.25 per ton. After piling up about 40,000 tons in its storage yards, the byproduct company concluded that it was time to stimulate a demand by lowering prices. Solvay coke now sells at $16 per ton for egg and nut and $13 for pea size. Gas coke is marketed at $15 for nut and $13.50 for small nut.

Following are the current prices at the present time: Pittsburgh and Youghiogheny screened $9.50, pile run $9, screenings $8.50; West Virginia screened $9.50, pile run $8.75, screenings $8.50; Pocahontas screened $13.50, mine run $11.75, screenings $9.50, smithing $12.50; Kanawha Gas mine run $9; Illinois and Indiana screened $9, pile run $8.50, screenings $8; Anthracite egg $15.95, stove $16.20, nut $16.20, pea $14.35, buckwheat $12.65.

Inland West

CHICAGO

No Activity in Coal Market — Retail Price Cutting — Low-Price Coal Only Is Moved.

There is practically no activity in the Chicago market. A few operators and jobbers who have friends that they have taken care of during the past year are shipping a little coal, but as a general thing, only a few cars of coal are being sold in Chicago, either to the factories or the domestic trade.

Some of our largest retail dealers have published quotations in the daily press, cutting prices on practically all grades of coal burned in Chicago. We understand that in spite of these price revisions but few orders have been placed, as the buying public is not

purchasing fuel unless absolutely forced to do so.

Eastern coals, strange to say, are unpopular in the Chicago market. Dealers quite naturally want something to handle that the people will buy and the public demand is now for inexpensive coal, for instance coal that can be purchased at cut rate prices, in the first place, and moved to Chicago cheaply, in the second place. For the time being, quality is not so much a talking point, as low prices.

CINCINNATI

Spot Demand Unimproved—Some Industrial Resumption—Retail Prices Off.

Conditions show practically no change. While reopening of a number of plants, after several months of idleness, has tended to increase the demand for steam coals, very little trading is being done.

Despite the present business depression, however, operators and dealers are optimistic regarding future conditions of the Cincinnati market. Belief is expressed that with the coming of the new administration next month, business will gradually pick up again. It is the hope of dealers and operators that with the resumption of business in the manufacturing end, a normal output of coal will be assured.

Quotations on bituminous lump at the mines during the week ranged $3.50@$4.25. Bituminous mine run was quoted $2.25@$2.75. Smokeless lump was $5.75@$6 while mine run ranged $4@$4.50.

Continued warm weather has tended to make the demand for domestic fuels very easy. The first reduction on domestic coals this winter is noted in prices quoted by dealers.

The following prices on coal delivered to the consumer were quoted during the week; bituminous lump, $9.25@$9.50; mine run, $8.50@$8.75; smokeless lump, $10.50@$11; mine run, $9@$9.50; anthracite, chestnut and egg, $15@$16.25; domestic egg coke, $14.50@$16.

CLEVELAND

Coal Prices Unchanged—Buyers Urged to Fill Wants Now—Demand Is Lifeless.

Bituminous—The promised industrial revival has not yet put in an appearance. Some mills are gradually increasing their activities, but others are curtailing and the vast majority are without sufficient demand to justify anything like full-time production. This situation goes a long way in explaining why the coal market is a dead affair.

In an effort to stimulate purchasing of coal and to point out to consumers the wisdom of covering their coal requirements now, northern Ohio coal operators, wholesalers, and retailers, and Wheeling & Lake Erie railroad officials have launched a concerted campaign. A committee of four is touring the northern part of the state in an effort to get the coal men's message to buyers.

Bituminous coal receipts at Cleveland are running along at about the same minimum figures—for the week ended Jan. 29, industrial, 1,168 cars, domestic, 399; week ended Feb. 5, industrial, 1,050 cars, domestic, 440.

Anthracite and Pocahontas—Better supplies are available at retail than for many months. The continued mild weather has kept demand at a minimum. No change in the retail prices are reported, however.

Lake—The season is making marked headway and more docks are being put into operation every week. The Wheeling & Lake Erie coal docks at Huron have just been started with full force. Much coal is being sent to the lower docks by operators, in readiness for the opening of the season, which will not be for some weeks yet. Vessel tonnage is being freely offered shippers by boat owners.

Retail prices of coal delivered are: Anthracite—all grades, $14.90. Pocahontas—shoveled lump, $11.90; mine run, $10.50. Domestic bituminous—West Virginia splint, $10; No. 8 Pittsburgh, $8.15; cannel lump, $12.15. Steam coal—No. 6 and No. 8 slack, $6.60; No. 6 and No. 8 mine run, $9, and No. 8 2-in. lump, $7.50.

DETROIT

Buyers Indifferent to All Offerings—Quotations Stabilize—Little Attempt to Force Sales — Weather Conditions Unfavorable.

Wholesalers and jobbers report there is very little inquiry for either domestic or steam sizes. The small amount of business transacted is described as "forcing coal on the buyers." Making full allowance for the effect on the coal trade of the general depression in business, some of the jobbers express the belief that continuance of the present conditions is almost certain to bring about a situation similar to that last summer when consumers were striving in every way to obtain coal which the mines were unable to supply.

While there are signs of a gradual improvement in industrial conditions, no apparent increase in business is coming to the wholesalers and jobbers. Users of steam coal are operating on a low production basis and require very little fuel. Withdrawals from reserves are meeting the coal requirements of the greater proportion of the factories.

Though not very much coal is arriving, there are occasional reports of shipments that brokers are experiencing much difficulty in getting off the tracks. Very substantial reductions have been made in some prices quoted.

Weather conditions continue unfavorable to stimulating demand in the domestic trade and extensive unemployment is also a factor curtailing the sales of dealers. They show no disposition to increase stocks until a more active demand develops.

Smokeless mine run is quoted $4.50 at the mines. Lump brings about $6.50. West Virginia lump is held at $4, mine run $2.75@$3 and nut and slack at $2. Lump from Ohio mines is $4, mine run $2.75 and nut and slack $1.75 The quotations, however, are altogether nominal and cannot be regarded as accurately reflecting the market.

COLUMBUS

Better Tone to Steam Grades—Domestic Business Still Slow—Prices Firmer.

Buying is slightly more active which coupled with reduced production, brought about by curtailment in the output, has caused a stronger tone to develop. The extreme low prices which have been prevalent have disappeared to a large degree and in their place is a more stable market. Quotations appear in the Weekly Review, pp. 335-6.

Some concerns are resuming with reduced forces and are in the market for stocks. There is a considerable tonnage of small sizes moving. Reserve stocks in the hands of steam users are still rather large and this accounts for the slowness in some localities.

With mild weather still prevailing there is no snap to the domestic demand as dealers' stocks are sufficient for the present. Householders are buying in small loads only. Retail prices are firm. Hocking lump sells $7.50@$8, while West Virginia splints are $8.50@$9.25. Pocahontas is one of the strongest points in the market with retailers asking $10.50@$11.

Lake trade is attracting some attention and indications point to a slow starting. Dock men who have their own mines will probably start shipments as soon as navigation opens, which will be rather early. Other shippers will not buy early except what odds and ends that can be picked up easily.

Production is slow in all fields in the Buckeye State. Reports from the Southern Ohio Coal Exchange show that for the week ended Jan. 29 out of a capacity of 581,893 tons only 162,748 tons were produced. Of the shortage 322,635 tons were from no market.

ST. LOUIS

No Markets for Either Steam or Domestitc — Price Cutting Continues — Mine Idleness Grows — Railroads Consume Storage Coal.

There is very little change excepting that conditions are a trifle worse. Warm weather continues. There is no domestic demand either locally or in the country and the industrial situation has not changed so as to warrant an increase in the steam demand. Added to this the railroads are picking up their storage coal, so the situation of the Illinois mines is beginning to border on the critical.

Several mines in the Standard district have not worked for more than two weeks and the miners are getting uneasy. Commercial mines work from 1 to 3 days a week. Some mines on railroad coal get as many as 4 days. Screenings are as low as 75c., with the

top at about $1, lump, 2-in. is $2.50 with 6-in. at about $3, nut and egg $2.50@$2.75, and mine run at about $2.

Mt. Olive district shows domestic sizes at $3.50 and steam sizes going pretty well on contract. Commercial mines get 2 to 3 days a week, with a fairly good tonnage moving North and West.

In the Carterville field the demand is easing up and giving trouble to the operators to move their coal. Some mines have been forced to suspend over 60 per cent on account of no business. Some railroad coal moving out is helping the situation. Steam sizes are hardest to move. The association mines are getting around $4 for domestic sizes and better than $2 for screenings, with mine run $2.75@$3. Independents are getting as low as $3.25 on domestic sizes, with screenings $1.25, and mine run around $2.50, with few takers.

South

BIRMINGHAM

Steam Market Stagnant—Domestic Demand Very Easy—Production Further Curtailed.

There were no evidences of improvement in local market conditions the past week. Spot trade in steam coal is extremely dull, offerings being confined to small lots here and there, which in the aggregate do not amount to any considerable tonnage. Deliveries against contracts continue on a minimum basis in most cases, with occasional temporary suspensions being called for. Prices remain stable around quotations which have been in effect for the past several weeks. The situation as regards surplus coal is being taken care of by the closing down of mines and reduced operations to meet "No Market" conditions. Spot prices are as follows, per net ton mines:

	Mine Run	Washed	Lump
Big Seam	$2.95@$3.25	$3.50	$3.50@$4.00
Black Creek and Cahaba	4.00@ 4.50	5.00	5.00@ 7.00
Carbon Hill	3.35@ 3.50	....	5.50
Corona	3.50	....	6.00
Pratt	3.50@ 3.75	....	.....

Domestic conditions are easy due to the protracted unseasonable weather, but the demand is of sufficient strength to take the output of the mines and enable steady operations, as retailers are without any stock accumulations and need coal to meet current needs.

Mines throughout the Alabama coal fields as a whole are not averaging over 50 per cent working time, a number of operations without any contract protection being closed down for the present.

LOUISVILLE

Industrial Demand Improving Very Slowly—Sluggish Market Seen for Some Time—Prices Shade Off.

Some operators say that conditions do not warrant a belief that there will be any material improvement in business for a period of four or five months, or until summer or fall stocking sets in. It is believed that such business will come late this year on account of tight money, and uncertainty on the part of the buying public.

Industrial demand is improving very slowly, although a number of the larger local consumers are on an increased production basis. Many have high-priced fuel still on hand, and will not be in the market for some time.

"One-car" business continues strong, there being no big orders or contracts just now. Retailers, in view of mild weather continue buying lightly, and this is easing the market on prepared sizes. As a result screenings are a little stronger.

Straight Creek and Harlan prices are fairly well together, with the higher grades of Jellico with them. Hazard quotations are as low as $3.40@$3.75 for lump, $2@$2.50 for mine run, $1.30 @$1.75 for screenings. Elkhorn prices are about the same as Hazard. Other quotations appear in the Weekly Review.

Southwest

KANSAS CITY

Spot Market Quiet — Prices Lower — Production Declines.

Spring weather continues throughout the territory and demand for domestic is practically nil. Industries have not resumed full-time operations and very little spot coal is moving.

Present quotations are: Missouri lump $4.50, mine run $3.50@$4, slack $1 up; Kansas lump $5.50, nut $5, mine run $4.50, mill $4@4.25, slack $3.75@$4; Arkansas lump $6, mine run $4.50, slack $3.50@$4.

Mines in Kansas are running about 60 per cent of capacity, Arkansas 25 per cent and Missouri about 70 per cent, indicating the declining production rate.

West

DENVER

Cold Weather Stimulates the Market—Price Bottom Apparently Reached.

The market is a little better at present, due to cold weather. There has been a demand for quick shipments for bituminous and some lignite. The general impression that prices will remain firm is having a tendency to still further push the somewhat lagging buyer to fill his wants for the remainder of the winter.

Lignite lump retails at prices varying $6.95@$8.15, the latest drop of 25c. coming Feb. 1. Louisville lignite is $5.75 f.o.b. mine and $9.90 retail. Lignite steam is $2.40 mine, and $5.30 in wagon lots.

Bituminous in Routt and Southern fields generally is bringing $6.50 for lump at the mine, and $6 for nut, while Routt retails $12.50 and Southern for $11.50. Bituminous steam is $3@$3.50 at the mine and $6.75 in wagon lots, while coking steam is bringing $8.05 retail.

January proved a precarious month for operators, the possible tonnage showing a decided weakening from week to week, hitting the low level of 61 per cent production Jan. 29. The previous week showed 70 per cent production, a loss of 34,404 tons representing "no-market" conditions. The last week in January showed an inactivity of the market equivalent to 55,531 tons.

News From the Coal Fields

Northern Appalachian

PITTSBURGH

Demand Still Lighter — Less Distress Coal but Lower Prices on Production—Output Further Decreased.

There has been a further decrease in coal requirements. Demand from retail dealers is extremely light owing to mild weather and stocks laid in by householders before winter, and little movement in that direction is expected for the remainder of the season. The requirements of the steel industry as a whole have decreased. Independent steel mills have been taking little coal for many weeks, while the Steel Corporation, which gets coal from the leading Pittsburgh producer, has just been forced to reduce its operations somewhat and is likely to be on a much lower operating rate in a few weeks.

While the "distress" coal that pressed on the market so much for several weeks is now very largely out of the way, making a steadier market in that respect, some operators are willing to name closer prices than they formerly considered, and on the whole the spot market is easier. Some of the prices made do not cover cost, properly computed, but save the operator from paying his overhead from reserve, with his mines idle.

There is no interest in contract coal and the price is not a definite issue. The Pittsburgh Coal Co. has a schedule of prices, as noted in recent reports, on the basis of $3.25 for steam mine run and $3.50 for gas mine run. Pro-

duction in the Pittsburgh district continues to decline, being now at 45 per cent or less of rated capacity.

We quote spot coal as follows: steam, slack, $2@$2.10; mine run, $2.25@$2.50; screened, $2.50@$2.75; gas, mine run, $2.50@$2.75; screened, $2.75@$3; byproduct, $2.50@$3, per net ton at mine.

CONNELLSVILLE

Production Decreases Further — Operators Encourage Consumption by Making Price Concessions.

Merchant coke production is tending to decline from a rate already only one-third that of last summer, the sole exception being that one operator with a particularly favorite brand of foundry has made such sales through reducing prices as to have occasion to blow in a few additional ovens. Instead of there being no buying of spot furnace coke, as formerly, there has been a little in the past week, and this may perhaps be traced to one or two furnaces that had contracts at $6 for January and were unwilling to continue the contracts at that price. For the best coke as high as $5.50 has been paid, but some can be secured at $5.

While most operators take no live interest in the situation, being still committed to the policy of keeping their ovens idle until demand develops at their price, others have grown impatient and desire to create demand by reducing prices. One operator offers to sell on contract to July 1 at $5, the common quotations previously having been $6. Two or three operators having contracts that are inoperative on account of the furnaces being idle are prepared to revise prices provided the furnaceman can thereby operate and take coke. On account of the decline in pig iron ratio contracts that have a $5.75 minimum are down to that minimum now.

Some very good grades of foundry are now available at $6.50 for spot or contract, while $6 remains the price on ordinary brands. The market as a whole is quotable as follows: spot furnace, $5@$5.50; contract furnace, $5@$6; spot foundry, $6@$6.50; contract foundry, $6.50.

The *Courier* reports production in the week ended Feb. 5 at 137,180 tons by the furnace ovens, a decrease of 2,220 tons, and 19,900 tons by the merchant ovens, a decrease of 7,330 tons, making a total of 157,080 tons, a decrease of 9,550 tons. Last August the merchant production was averaging 85,000 tons a week.

UNIONTOWN

Competition Is Keen—Independents in Quandary Over Production Costs.

Competition is increasing daily in the selling end. The few consumers that are in the market are talking price and get the quotations of a number of operators and jobbers before placing orders. In one instance locally a sale for five cars had been virtually completed for $2 per ton when the buyer was offered the same grade of coal for $1.95 and bought at the lower figure.

The announcement of Judge E. H. Gary that the Steel Corporation was not even considering a wage reduction will have a far-reaching effect in the Connellsville region. With the H. C. Frick Coke Co. fixing the wage scale for the region, the Gary announcement ends the uncertainty of adjusted wages and places independent coal and coke operators in a quandary.

Their claim is that no independent coal can be produced or coke manufactured until the market reaches a point equal to cost of production. Two solutions are available. One is an increased market price and the other is reduced wages. The latter is now removed from the lists and there is not sufficient demand to increase the market price. It would appear that the only thing for the independent operators to do is to continue their present suspension of operations and wait for the demand to come.

EASTERN OHIO

Production Reflects Better Industrial Tone — Prices Unchanged — Lakes Activity.

While there is some recovery in industry and reports of plants resuming are on the increase, it was but slightly reflected in coal production during the week ended Feb. 5. Tonnage produced was estimated at 307,000 tons or about 47 per cent of rated capacity.

Railroads continue to take over 50 per cent of the weekly output. However, a little improvement is being felt in industrial demand and operators express the opinion that there will be a gradual betterment. It is expected that some mines will resume production within the next few weeks.

Notwithstanding the loading of some cargoes at lower Lake docks during the past ten days, very little of this tonnage has come out of the No. 8 field, although such shipments are expected to be increased in the very near future. This coal represents shipments only on the part of operators having dock interests in the Northwest. Some difficulty is being experienced in getting boats, many of which expect to go into drydock for repairs before the season opens. Aside from this, many boats are unable to secure berths of sufficient depth to carry full cargoes until the opening. Lake coal that is now being forwarded to the docks serves a two-fold purpose; first, that of keeping the mines going, and second, that of permitting the railroads to transport this tonnage before facilities become taxed by a recuperated industry.

While there have been reports of some contracting on Lake coal at $3.50 f.o.b. mines, it is generally felt that much of this is mere rumor and that nothing of any consequence has been done up to this time.

The market remains stationary, with no real improvement in the trade. Mine prices on spot coal range somewhat as follows: Slack, $1.75@$2.25; mine run, $2.25@$2.75; ¾-in. lump, $3@$3.50; 1¼-in. lump, $3.25@$3.75; domestic lump, $3.75@$4.25.

CENTRAL PENNSYLVANIA

Increased Demand Anticipated—Operators Oppose State Coal Tax Bill.

No improvement was noted in the coal situation during the second week of February and production is likely to fall even below that of January. Larger operations are running from two to four days a week and throughout the field many loaded cars are stored awaiting orders for shipment. In the Johnstown district, the state employment service reports some demand for miners, but only for part time. The feeling of operators, however, is that the peak of the depression has been passed, and they are preparing for an increased production.

Central Pennsylvania operators will oppose the bill which has been introduced into the legislature at Harrisburg to impose a tax on coal. They must compete with the untaxed coal of West Virginia and the tax would be an unjust imposition on one of the biggest Pennsylvania industries. Operators contend that they are already taxed heavily by the state revenue as corporations and the coal tax would not only increase their burden but put them out of the class with other untaxed states.

FAIRMONT AND PANHANDLE

Some Removal of Contract Shipments —Outlook Slightly Better but Not Yet Reflected in Current Markets.

Fairmont

Renewal of some northern West Virginia contract shipments reflected an improved industrial condition. Business even picked up during the week ended Feb. 5, although spot sales were decidedly few, as it was mostly a restoration of suspended contracts.

Interest is centered in the coming Lake season. Western calls were sluggish, the bulk of the output going East. Railroad fuel production declined slightly while shipments to Tide were well maintained. Some distress coal appeared at low figures, but as a rule producers refused to cultivate the market.

Northern Panhandle

More numerous inquiries of late have afforded a ray of hope for the future. However, very little new business has as yet been negotiated.

Virtually all commercial contracts are under suspension or vigorous curtailment, including rail fuel business. Producers are refusing the low spot market offers and the output has declined to less than 30 per cent of normal. Another important factor in holding back production is the general idleness prevailing in the Wheeling manufacturing district.

Middle Appalachian

LOW-VOLATILE FIELDS

No Markets, Either Domestic or Export, Cuts Production—Rejections and Accumulations at Tide—Contract Orders Declining.

New River and the Gulf

New River production was greatly curtailed during the week ended Feb. 5. A tendency on the part of the smaller producers to consign coal unsold proved a costly experiment and resulted in a discontinuance of such a practice, not, however, before there was a large tonnage at Tide, much too large for immediate absorption.

The necessity of sacrificing coal at Tidewater had a depressing effect on all prices. The Western market was very weak, even for prepared sizes and screenings were not easily moved.

Loadings in the Winding Gulf region were lighter than ever, operations being limited to about two days. Many mines were shut down entirely. Open-market prices were no incentive to operators, being too low to hold any profit.

Pocahontas and Tug River

Pocahontas mines were not producing more than 60 per cent, total losses aggregating 200,000 tons, of which "no markets" were the heaviest, although poor placements hindered some mines.

Early in the week the N. & W. embargoed all Tidewater shipments, due to an accumulation at their piers. Resumption was soon permitted but foreign demand was almost entirely lacking.

Standard spot prices were unchanged, although much coal was sold at shaded figures, due to rejections and consignments.

Reduced railroad purchases and contract shipments curtailed Tug River production, the output not being much in excess of 60 per cent of capacity. However, a larger percentage of potential production than in other smokeless fields was still being loaded.

HIGH-VOLATILE FIELDS

Production Still Declining—Railroad Fuel Cut—Distress Coal Lowers Spot Range.

Kanawha

Although but little coal changed hands during the first week in February the wide range of $1.75@$3 on sales closed indicated the varying attempts to push production. Southern markets for domestic at $4 offered a better outlet than the Western price of $3.75.

Operations were maintained about two days out of the week. Complete stagnation of export demand continued. Loadings did not average more than 15,000 tons per day.

Logan and Thacker

Logan output continued to decline, while the supply of empties grew larger. The bulk of orders on hand went out early in the week and thereafter mine idleness was general. Extremely low prices ruled the few spot sales made.

Contract orders were light, while inactivity in railroad and Tide markets further restricted production. In some cases spot mine run was moved at less than $2.

Mine idleness grew in the Williamson field during the week ended Feb. 5, with operations placed at 50 per cent of capacity. All markets were apparently well-stocked. The N. & W. cut its fuel purchases 10 per cent, which materially affected the output.

Neither strike nor labor shortage losses were any longer factors in the total loss of production. Conditions in the field were quieter, probably because of the trial under way at Williamson.

Northeastern Kentucky

Under the pressure of a falling market, production took another downward turn. Only 19 per cent of capacity, or 47,000 tons were produced. "No markets" caused a loss of 80 per cent. Both contract and spot orders were practically nil.

Virginia

"No-market" losses were the heaviest of any time in the last three years. Mines running standard grades were operated about four days. The total production was estimated at about 50 per cent of capacity. Smaller mines were generally out of commission.

Middle West

MIDWEST REVIEW

Prices Fairly Stable—Demand Weak—Production Sharply Curtailed—Industrial Situation Unimproved.

Practically all of the newspapers in the Middle West are doing their level best to convince the public that the industrial situation is showing some signs of improvement. An impartial observer, who has access to the true situation, finds it just as unsatisfactory as before Christmas. A number of factories that were started in a half-hearted way after the first of the year, have reconsidered the matter and have closed their doors once more. Very little coal is moving in the Middle West for industrial purposes.

The weather continues to be uniformly mild and unseasonable. A few weeks of this under ordinary circumstances, would not depress the market, but when a mild season comes on top of an industrial situation like we are facing at the present time, the results are very unfortunate for those engaged in the coal business.

Practically all of the retailers in the North and Middle West have more coal on hand than they want and still more rolling to them on contract. The situation in the Northwest is perhaps worthy of mention. This territory did not receive its full share of coal, in some respects, during the summer months and it was confidently considered that the Northwest could be counted upon to absorb a large tonnage during the fall and winter months. This, however, has proved to be far from the actual case. The farmers in the Northwest are shipping their grain into market and being paid for it, but they are not getting anywhere near the prices for it that they expected to. This situation is true all over the territory and while the farmers have some ready cash on hand, they are very careful, indeed, how they spend it and are buying only in a hand-to-mouth manner.

There is a decided drop in the tonnage produced. It is confidently predicted by operators in the Middle West that there will be still further decreases in production, as one hears of more mines closing nearly every day. Those mines still remaining in operation are forced to meet conditions and sell their coal at an actually below cost figure. This can, perhaps, keep up a little while longer, but not indefinitely. We, therefore, have no hesitancy in saying, in our opinion there will be more mines idle before the spring season comes in.

DUQUOIN

"No Bills" Accumulate—Prices a Trifle Softer—Contract Interest Shown.

The slump has reached its lowest point in the belief of mine operators who are now beginning to figure on contract prices as it is more nearly possible to see a few months ahead of the game now than a few weeks ago. Prices are somewhat steadier although very low and the output is equalizing itself with the demand. Some few plants are re-opening, while others are remaining closed until a more opportune time.

With mines operating on an average of three days per week and weather conditions in favor, the car supply is still uncomplainable. The most difficult proposition the roads are now having is handling "no bills."

WESTERN KENTUCKY

Mines Operating Two or Three Days a Week—Slightly Stiffer Price on Steam.

Mines are maintaining prices very well, all things considered, and are even getting a slightly better price for screenings. The best demand is for lump, with some little demand for mine run.

Ruling quotations this week show: Lump, $3.25@$3.50; nut, $2.25@$2.50; mine run, $2.10@$2.50; nut and slack, $1.40@$1.70; pea and slack, $1.40@$1.70.

Nut and slack is slightly up over last week's quotations, due to a little better demand from industrial concerns using fine coal in automatic stokers. Railroad buying continues very light, with some of the mines still down which have been depending on this class of business.

MINE And COMPANY NEWS

ALABAMA

At the recent semi-annual session of the **State Board of Examiners**, thirty-three certificates of competency were granted to applicants as first class mine foremen. Eleven received certificates to hold positions as second class mine foremen, and ten passed the examination on qualifications as fire bosses.

R. H. Eggleston, of Birmingham, has been appointed receiver for the **Inland Coal and Iron Co.**, with operations at Inland, Blount County, following the filing of a petition of voluntary bankruptcy by the corporation. Liabilities are listed at $111,000, with estimated assets of $53,953.

The securities division of the Alabama public service commission has authorized the **Shelby-Cahaba Coal Co.**, of Birmingham, to issue $35,000 of 8 per cent cumulative preferred stock in the state.

COLORADO

Protesting the Calder Federal Coal Act, Colorado coal men are demanding of the state's congressional delegation opposition that will tend to kill the proposed legislation. The wires to Washington are being kept busy with a storm of telegrams. Among those most active are: The Oakdale Coal Co., Victor-American Fuel Co., The Denver Civic & Commercial Association, Colorado Retail Coal Dealers' Association, and many others.

The Colorado Retail Coal Dealers' Association, scheduled to meet in annual convention at Fort Collins June 14-15-16, has advanced the dates to May 16-17-18, on account of pending congressional legislation and because of the general unsettled conditions in the coal industry.

ILLINOIS

The Springfield District Coal Mining Co. has filed notice of increase in capital from $100,000 to $1,000,000 for proposed expansion.

The miners employed at Mine No. 2 of the **Saline County Coal Co.** near Harrisburg, have been ordered to clean up their coal as the mine is to close down for an indefinite period. About 240 men are affected.

The new mine No. 4 of the **Saline County Coal Co.**, recently sunk on the Saline and Williamson county line, is now hoisting coal. However, the Big Four has not yet completed its switch to the mine.

INDIANA

An apt illustration of "blue sky" stock selling was given at Columbia City recently when a number of Illinois persons visited the place and asked to be directed to the **Merriman coal mine.** It was learned that each of them had invested in stock at $500 a share in a corporation supposed to own a mine in Whitley County. A year ago a young man from Terre Haute obtained a number of leases in Washington township, Whitley County and started to drill for coal. When he had drilled to a sufficient depth to establish the fact that there was no coal in his property drilling was stopped. No stock was sold by him or any one connected with the proposition, but an enterprising salesman heard of the abandoned shaft and organized a company. This mine is presumed to be the one in which Illinois residents invested.

A million dollar company has been formed at Spurgeon, for the purpose of sinking and operating coal mines. The company will be known as the **Vulcan Coal Co.** The directors are L. C. Julian, T. W. Eakins and J. H. Inglehart.

Judge A. B. Anderson in Federal court at Indianapolis, has overruled the motion of the state special coal and food commission to dismiss the suit for injunction brought by **E. E. Heller & Co.** Arrangements on the motion to dismiss were heard some time ago. The plaintiff company, retail coal dealers, denies the right of the state to regulate the retail coal business by the methods used by the coal and food commission.

The coal interests of John, Stewart and Edward Shirkie have been consolidated in a $1,000,000 corporation at Terre Haute. The company will be known as the **Bickett-Shirkie Consolidated Coal Co.** The personnel of the company includes John Shirkie, president; Stewart Shirkie, first vice-president and general manager; Edward Shirkie, treasurer and chairman of the board of directors: C. A. Bickett, Chicago, second vice-president; Bryan C. Tighe, Chicago, director. The firm now has a consolidation of the West Clinton Coal Co., the Busseron Coal Co., the Bickett-Shirkie Coal Co., and the Tighe Coal Co. The mines have a producing capacity of 5,000 tons a day. The plan of consolidation came as an effort to centralize the management of the coal interests of the company giving a better organization promoting greater efficiency.

KENTUCKY

The Peter Mining Co., Ashland, has increased its capital stock from $150,000 to $175,000.

The Bolinger Coal Co., Hazard, has been chartered with a capital stock of $90,000, by J. N. Bolinger, J. E. Jones, W. R. Vance and Bert Buell.

The Pittsburgh Fuel Co. which has the best river coal handling plant in Louisville, is now putting its rail coal handling on the same basis. A 100-ton dumping pit is being installed, and a locomotive crane, which will lift this coal to 600 ton hoppers. **The James Coal Co.** is putting in a $50,000 coal handling plant at its retail coal yard, using a conveyor system from pit to hoppers. **The St. Bernard Mining Co.** has put in a twenty-ton truck scale at its Logan Street yards. **The Charles Buddeke Coal Co.** is planning to put in power equipment for handing at its Logan Street yard.

The Number Four Superior Coal Co. will soon commence the construction of a tipple at its local properties. A number of new mines will be opened at an early date and equipment installed.

OHIO

The Bellaire Mining Co. with holdings in Adena, has elected the following directors and officers for the ensuing year: James Stewart, Pres. and Treas., Donald Ward, Vice-Pres., and A. J. Harbagh.

At the annual stockholders meeting of the **Hocking Valley Products** which has offices in Columbus and a number of mines in the Hocking Valley, a five per cent dividend was declared. Net earnings for the year were $114,000. The same corps of officers were re-elected. S. L. Chamberlaine is president; Robert H. Taylor, Jr., resident manager, and F. J. Shaffer, secretary-treasurer.

The annual meetings of the **Maher Collieries Co.** and **Marcoll Coal Co.** were held in Bridgeport recently and the following officers were re-elected: Maher Collieries Co., T. K. Maher, pres.; J. C. Heinlein, vice-president and general counsel; K. G. Perry, sec'y, and J. V. Maher, treas. The Marcoll Coal Co., John A. Maher, pres.; J. C. Heinlein, vice-president and general counsel; K. G. Perry, sec'y. and J. V. Maher, treas.

Probably the first co-operative coal company ever organized has been formed in Cincinnati. **The People's Co-operative Coal Company** has been incorporated with a capital of $300,000, divided into 30,000 shares of stock at a value of $10 per share.

PENNSYLVANIA

Colonel Lloyd G. McCrum, of Somerset, who is associated with the W. H. Bradford interests, has again taken over the **Brandenburg Coal Co.** at Rockwood. The former lease had expired on Dec. 31, 1920. The mines will be operated under the firm name of **Ivy Ridge Coal Mining Co.** The new lease is for four years. The mines have been closed down for some time owing to the ending of the lease and the slump in the market but operations will be started as soon as conditions warrant.

Secretary Charles O'Neill of the Central Pennsylvania Coal Producers' Association has returned after appearing before the senate committee in Washington which is considering the Calder bill. Mr. O'Neill told the committee that the 1916 cost in the district for mining was $1.14 as compared with $3.17 in 1920. He said labor in 1916 was 92c. a ton while in 1920 it was $2.19 while supplies went from 10c. a ton to 46c. and overhead charges from 12c. to 52c. Mr. O'Neill pointed out to the committee that the 1920 statistics from the district were not very complete because of a general invitation from the department of justice for everybody to quit collecting cost statistics.

WEST VIRGINIA

The Robinson & Phillips Coal Co. has acquired about 1,500 acres of coal property in the Flemington district, Taylor County, and plans for extensive development work. A consideration of $750,000 was given for the lands. It is proposed to install equipment at an early date.

Indian Creek in Monongalia county is to be the scene of operations of the newly organized **Fort Grand Coal Co.**, of Fairmont, which has a capital stock of $80,000. Heavily interested in this company are W. D. Reed, S. McIntire, J. M. Poling, W. F. McKan, Bruce Hite, all of Fairmont; F. S. Suttoth of Grafton, W. Va.; W. F. Hughes, of Morgantown, W. Va.

The Eight-Mile Coal Co. just organized, expects to produce coal in the Kanawha field, being capitalized at $25,000 and having offices at Charleston. Active in organizing this company were J. R. Cunningham, E. H. Jones, C. E. Parks, D. P. Reid, W. W. Venable and R. E. Whitteker, all of Charleston, W. Va.

Preliminary plans of the **Barbour Lewis Coal Co.**, call for development in both Lewis and Barbour Counties, this company being capitalized at $200,000. General offices are to be maintained at Clarksburg. Organizers of this concern include C. M. Barnes, J. D. Stark, of Bridgeport, W. Va.; M. M. Murphy, M. S. Gaines and Karl B. Kyle of Clarksburg, W. Va.

With a view to producing coal in Union district of Barbour County, the **Bush-Bar Coal Co.**, has been organized, with a capital stock of $25,000. Offices of the company temporarily will be in this city. Principal figures in the new company are: W. C. Dunnington, E. L. Winchell, C. J. Rathburn, W. L. Camden and H. M. Wenks, all of Mountain Lake Park, Md.

Coal territory in Preston County will be developed by the newly organized **Pleasantdale Coal Co.** which has a capital stock of $100,000. Those behind the new company are: Nick Pall, Salvatore Masseoli, Domencio Lepneci, Angelo Guarglia, John Chafini, Antonio Masseoli, all of Morgantown.

Charleston captialists have launched the **Fernwood Coal Co.** which will operate in the Kanawha County field, this concern being capitalized at $100,000. Active stockholders in this concern are: C. T. Smith, J. D. Wygol.

E. W. Lewis, J. E. Lewis, A. B. Atkinson, all of Charleston, W. Va.; W. P. Mankin of Ashton, W. Va.

Organization of the **Oakland Coal Co.** with a capital stock of $1,000,000 presages operations on a very large scale in Fayette County. For the time being this company will have its principal office in Fairmont, local people as follows being largely interested in the new concern: J. V. Abbott, W. F. Foster, Charles Hodges, J. F. Coll and T. E. Johnson.

The New England Fuel & Transportation Co. has plans under way for the opening of coal properties in the vicinity of Fairmont, and will install considerable equipment for mining and operation.

The West Virginia Eagle Coal Co., Bonear, has plans under way for the development of an extensive tract of coal property, comprising over 1,200 acres of land. Operating machinery will be installed at an early date. J. R. Charlton is treasurer and manager.

The Deegans Eagle Coal Co. is planning for the rebuilding of its tipple and power house, recently destroyed by fire, with loss estimated at close to $25,000.

During the legislative session of 1919 at the instance of the operators of McDowell County, a bill was introduced in the West Virginia legislature and passed, providing a special levy for the establishment of a dental clinic for the children of the county. **Colonel James Elwood Jones** of the Pocahontas Fuel Co. not only originated the idea but for a time personally defrayed the expenses of a dental clinic for the children at the operations of his company. The idea has proved so successful it is to be tried out in Mingo Fayette and Marion counties, bills having been introduced in the legislature making that possible if they are passed.

BRITISH COLUMBIA

The Modern mine of the **Pacific Coast Coal Mines, Ltd.,** Vancouver Island, still is non-productive. It is understood that some form of company reorganization is in progress and that there is a prospect that not only will the mine be reopened, but extensive development of the company's island holdings will be inaugurated in the near future. Meanwhile there are quite a number of miners in the Nanaimo section out of employment.

Stockholders of the **Old Dominion Coal Corporation** having authorized an increase in the capital stock of the company from $100,000 to $300,000, the secretary of state has granted the necessary sanction.

Due to the fact that a large number of oil-burning vessels plying in and out of Vancouver are being changed to coal-burners on account of the shortage of fuel oil, there will be a considerably greater demand for coal during 1921. In this connection it is very interesting to note just how much coal was bunkered at Vancouver and Vancouver Island in 1920, which is shown as follows.

	Vancouver tons	Vancouver Id. tons
January	4,500	200
February	6,300	3,800
March	200	200
April	7,700	300
May	7,600	4,300
June	5,900	100
July	4,500	200
August	4,800	200
September	4,200	300
October	7,300	900
November	6,400	1,100
December	*4,200	*800
Totals	*64,500	*12,500

*Approximate.

The British Columbia Coal & Land Co. has purchased the holdings of the **Cassiar Coal Co.,** situated on the Telkwa River, consisting of 20,480 acres.

Association Activities

Logan Coal Operators' Association

The annual meeting of the association held in Huntington brought to the front some of the political problems with which the coal industry is confronted and elicited a warning on the part of speakers that unless producers took a more active part in politics for the public good the picayune politicians would continue to suggest legislation resulting from the fit of hysteria from which incompetent politicians are suffering.

A large part of the tonnage of the field was represented at the meeting, there being between 75 and 100 operators present. The election of officers for the annual period resulted as follows:

Walter R. Thurmond, president; A. R. Beisel, R. R. Smith, vice-presidents; John A. Kelly, secretary; C. W. Jones, treasurer. Members of the executive committee: George M. Jones, A. R. Beisel, W. T. Jones, J. J. Ross, A. J. King and T. F. Downing.

Acting for the association, J. J. Ross, its president, conveyed to the representatives of West Virginia in the Senate and House of Representatives a protest against any resolution for the investigation of the non-union fields of West Virginia which might be in contemplation as the result of representations made about living conditions, etc., as being uncalled for and unfair.

Information was conveyed to the members that the extension of both the Virginian and the Norfolk & Western into the Logan coal field was under serious contemplation and that probably $50,000,000 would be expended in connection with such extensions and improvements, it being proposed by the Virginian to build a branch from Elmore to Gilbert and by the N. & W. to build a branch from Dingess to Logan.

Montana Coal Operators' Association

The annual meeting of the association was held in Billings. Officers elected were F. W. C. Whyte, Anaconda president; H. S. Hopka, Roundup, vice president; M. F. Purcell, Billings, secretary and treasurer. Board members chosen were C. C. Anderscn, James Needham, R. W. Wilson and G. M. Freeman.

Operators' Association of Williamson Field

The association was represented by a committee of three in a hearing before the Public Service Commission of West Virginia on Feb. 9 on the question of an increase in rates for the Kentucky & West Virginia Power Co., which supplies power to some of the mines in the Thacker region. The company is asking for an increase of 25 per cent. It was to protest against such an increase that the following committee appeared before the commission: A. B. Rawn, A. F. Leckie and N. H. Franklin. In protesting against the increase the committee set up the argument that with prices on fuel and materials going down, the power company's application should be denied.

Trade Catalogs

Imperial Headlight Projectors and Reflectors. Crouse-Hinds Co., Syracuse, N. Y., Bulletin 304-A. Pp. 15; 8 x 11 in.; illustrated.—Advertiser.

Thomas Meter and Calorimeter. The Cutler-Hammer Mfg. Co., Milwaukee, Wis.. Publications 875 and 876; 8½ x 11 in.; illustrated.—Advertiser.

C. H. Electric Space Heaters. The Cutler-Hammer Mfg. Co., Milwaukee, Wis. Publication 880; 8½ x 11 in.; illustrated.—Advertiser.

Small Capacity Industrial Oil Circuit Breakers. Type FP-10. General Electric Co., Schenectady, N. Y. Bulletin 47419A; 8 x 11 in.; illustrated.—Advertiser.

Jeffrey Mine Fans. The Jeffrey Mfg. Co., Columbus, Ohio. Catalog 280. Pp. 71; 7½ x 11 in.; illustrated.—Advertiser.

Automatic Station Control Equipment. General Electric Co., Schenectady, N. Y. Bulletin 47730. Pp. 20; 8 x 11 in.; illustrated.—Advertiser.

Wodack Portable Electric Drills and Grinders. Wodack Electric Tool Corpn., Chicago, Ill. Booklet, pocket size, illustrated.

Obituary

W. C. Reynolds, aged 60, mining engineer, and general manager of the Davidson Coal Co., near Point Marion, Pa., died Jan. 25 at the Mercy hospital, Pittsburgh. Mr. Reynolds had long been identified with the coal and coke business. He resided at Connellsville.

Morris Albaugh, general manager of the Meeker Run Coal Co., of Nelsonville died from the effects of sleeping sickness at a hospital in Columbus, Ohio, recently.

William Penn Snyder, aged 60, iron and steel manufacturer, and coal and coke magnate, died recently. Mr. Snyder was associated with many of the essential interests of Pittsburg.

Edward T. Bent, president of the Oglesby Coal Co, and former president of the Illinois Coal Operators' association, died recently in Chicago.

Traffic News

In the complaint of the **Perry County Coal Corporation,** the I. C. C. holds that the rates on bituminous coal from Coulterville, Ill., to destinations in Missouri on the Illinois Southern and Mississippi River and Bonne Terre Railways violate the long and short haul clause.

A reply brief has been filed with the Utah Public Utilites Commission in the case of the **Jeremy Fuel and Grain Co.** and others against the Denver & Rio Grande. The case has to do with coal freight rates between Castlegate—an important coal mining district in Utah—and Salt Lake City. It is stated that for some time the railroad had charged a blanket rate on coal of $1.60 a ton, and the complaining companies seek to obtain the difference between the charges paid and that which they feel should have been paid.

In a complaint to the I. C. C. the **Sloss Sheffield Steel & Iron Co.** of Birmingham, Ala., attacks the double increase on coal from Alabama mines to blast furnaces in Alabama, due to misapplication of General Order No. 28.

The West Kentucky Coal Co. complains against the rate of $3.45 a ton on coal from Wheatcroft, Ky. to Clinton, Iowa, on the ground that it is unreasonable because of a rate of $1.95 via another route.

The Corona Coal Co. of Birmingham, Ala. in a complaint condemns the practice of the government barge service in making rates on rail and water coal to New Orleans and Mobile the same as all-rail rates on coal, on the ground that it discriminates against coal.

In the complaint of the **Cedar Rapids (Iowa) Chamber of Commerce** the I. C. C. finds the rates on bituminous coal from Illinois and Indiana mines and from Chicago to Cedar Rapids are not unreasonable, unjustly discriminatory, or unduly prejudicial, and complaint is dismissed.

Oral arguments in the following coal cases have been assigned for Washington by the I. C. C.: March 2, **Chicago Coal Merchants Association** vs. Director General. March 11, **Gillespie Coal Co.** vs. I. T. S. March 17, **Ridge Coal Mining Co.** vs. Missouri Pacific.

In the case of the **Consolidation Coal Co.** vs. the Director General, the Commission decides that the rate on bituminous coal from mines near Gray and Bell, Pa., to Washington, D. C., Uniontown, D. C., and Alexandria, Va., is unreasonable.

The I. C. C. in a decision on the complaint of the **Little Fork Coal Co.** holds that the rates on coal from mines on the Eastern Kentucky Ry. south of Hitchins, Ky., to Cincinnati and other destinations are unreasonable and prejudicial because they exceed rates contemporaneously maintained from the eastern Kentucky districts and the Kanawha districts in West Virginia. Reasonable and non-prejudical rates are prescribed for the future.

In the complaint of the **Empress Coal Co.** the Commission decides that the rates on coal from Empress mine, Washington, to Portland, Ore., and certain other Oregon points are unduly prejudicial, and prescribes a reasonable relationship for the future.

In the case of the **Peerless Coal Co.** of Illinois, an I. C. C. examiner recommends that the rates on coal from points on the Springfield Terminal Ry. to various destinations be held reasonable.

The commission has suspended until June 1 proposed switching charge of 35c. per ton for switching coal from points of connection with the **Chesapeake Western Ry.** to private sidings on the **Valley Railroad**

Co., and also to connection with **the Southern Ry.**

The commission has suspended until April 2 the proposed cancellation of joint through rates on bituminous coal from mines on the **Minneapolis & St. Louis R.R.** in Illinois to destinations in Michigan and Alexis, Ohio.

In the complaint of the **Foster Lumber Co.**, an I. C. C. examiner recommends that the rates on soft coal from Walsenburg, Col., to Billings, Okla., are unreasonable.

The I. C. C. has decided that the proposed increased rates on coal from points on the **Louisville & Nashville R.R.** in eastern Kentucky and Tennessee and southwestern Virginia to points in central territory are justified with the exception of those to St. Louis, Mo. and certain intermediate points, to Jeffersonville and New Albany, Ind. and to certain other points.

The commission has assigned for oral argument Feb. 24 the case of the **Harlan County Coal Operators Association** vs. the L. and N. R.R.

Recent Patents

Mine-Car Wheel. Peter Taylor, Ottumwa, Iowa, 1,360,816. Nov. 30, 1920. Filed April 15, 1920. Serial No. 374,052.

Coke-Oven Door Machine. Louis A. Sanford, Chicago, Ill., assignor to American Coke & Chemical Co., Chicago, Ill., 1,361,186. Dec. 7, 1920. Filed Feb. 2, 1920. Serial No. 355,817.

Door-Operating Device for Self-Dumping Mine Cars. Archibald Cross, Bicknell, Ind., assignor to Allen & Garcia Co., Chicago, Ill., 1,361,230. Dec. 7, 1920. Filed May 28, 1919. Serial No. 300,376.

Loading Machine. O. Wilkins and Wm. E. Moody, Columbus, Ohio, assignors to James E. Jones, Switchback, W. Va., 1,361,053. Dec. 7, 1920. Filed June 16, 1919. Serial No. 304,478.

Coal-Loading Device. Richard T. McKeen, Chicago, Ill., 1,362,716. Dec. 21, 1920. Filed Aug. 8, 1919. Serial No. 318,172.

Coal-Loading Machine. Norton A. Newdick, Columbus, Ohio, 1,362,889. Dec. 21, 1920. Filed May 10, 1916. Serial No. 96,723.

Mine-Car Cager. James A. Nolan, Bowerston, Ohio, 1,362,598. Dec. 21, 1920. Filed Sept. 1, 1920. Serial No. 407,459.

Coal Lorry. Louis Wilputte, New Rochelle, N. Y., 1,362,977. Dec. 21, 1920. Filed Jan. 20, 1919. Serial No. 272,033.

Coal-Handling Plant. C. P. Wilson, Chicago, Ill., assignor to Roberts & Schaefer Co., Chicago, Ill., 1,363,029. Dec. 21, 1920. Filed May 21, 1918. Serial No. 235,783.

(U. S. Patent Specifications may be obtained from the Patent Office, Washington, D. C., at 10c. each.)

Personals

Charles E. Maurer, formerly president of the Glens Run Coal Co., Cleveland, is spending the winter months at Sea Breeze, Fla.

Thos. K. Maher, president of the Maher Collieries Co., Cleveland, and the Pittsburgh Vein Operators' Association, left on Feb. 1 for a pleasure trip to Canal Zone, Panama.

Attorney J. C. Heinlein, Bridgeport, vice-president and general counsel of the Maher Collieries Co. and the Marcoll Coal Co., was the guest of honor at the annual banquet of the Belmont County Bar Association held at Martins Ferry. Mr. Heinlein has been actively interested in the mining industry of eastern Ohio for many years.

Charles N. Mortimer, of Pottsville, who was engineer in charge of the Blackwood colliery up to the time of its suspension, and who has since been a consulting engineer for the Lehigh Valley Coal Co., has been appointed chief mining engineer for that company, with headquarters in Wilkes-Barre.

Edward S. Brooks, of Denver, has been elected to the presidency of the Union Pacific Coal Co., with offices at Omaha, according to a recent announcement.

A recent visitor among the coal trade of Philadelphia was **J. M. MacDonald**, of the MacDonald Coal Co., Cincinnati.

John McKay has been appointed assistant superintendent of the Connellsville Basin Coke Co. with headquarters at Morgantown. He was, during the war, connected with the district representative of the Fuel Administration at Fairmont.

R. R. McFall, general manager of the Southern Fuel Co. with headquarters in Morgantown, was a visitor in Buffalo, N. Y., recently.

Everhart Bierer, general manager of the Preston County Coke Co., has left Morgantown for a trip to Colorado.

J. S. Fiedler, of Morgantown, head of the Fiedler-Davis Fuel Co., is in Florida for a few weeks.

Colonel Thomas F. Downing, general manager of the Monitor Coal & Coke Co. with headquarters at Huntington, has been able to return home after having undergone treatment at a Huntington hospital.

The new district manager of the Huntington office of the West Virginia Coal Co. is **H. R. Freeman**, the appointment to be effective from Feb. 1.

Until the successor of the late N. J. Wood, president of the Central West Virginia Coal Co., is elected, **H. C. Rogers**, closely associated in business with Mr. Wood, is acting as president of the company.

Alba B. Johnson, president of the Baldwin Locomotive Works, in his capacity as president of the Philadelphia Chamber of Commerce, has honored **Daniel Whitney**, of Whitney & Kemmerer, as chairman of the transportation committee. His many years in the coal trade have peculiarly fitted Mr. Whitney for this work, and associated with him in the work is another coal man, **Samuel B. Crowell**, of the Geo. B. Newton Coal Co.

A recent visitor in the New York market was **C. E. Dodd**, of the Dodd-Shaw Fuel Co. of Morgantown, coal brokers.

R. S. Townsend, of the E. B. Townsend Coal Co., Boston, stopped off in Philadelphia recently. Mr. Townsend was on his way to Bermuda for the balance of the winter, where he hopes to forget the troubles of the coal man for a while.

P. C. Madeira, president of the Madeira-Hill Co., North American Building, Philadelphia, is another prominent coal man to seek the southern clime for a brief season. Mr. Madeira is spending the time among the coast resorts of Florida.

Colonel Daniel B. Wentz, head of the various Wentz coal interests, recently left for an extended trip to India and Africa. He expects to be gone about three months, and one of the objects of the trip is to indulge in some big game hunting in Africa.

W. W. Odell, who has been conducting fuels carbonization investigation at the Urbana Station of the U. S. Bureau of Mines, has been transferred to the Washington offices where he will assist **O. P. Hood**, chief mechanical engineer of the Bureau in the further prosecution of the lignite carbonization studies of the Bureau.

Lyle D. Flavel, formerly with the Paradise Coal & Coke Co., and for the past two years in the offices of the Jewel Coal & Mining Co., has been promoted to the position of assistant-superintendent and will have under his control two mines at Duquoin now operated by the company. **Ray S. Linzee** is now at the head of the Duquoin offices.

G. W. Santall, superintendent of the Crossland Mine of the H. C. Frick Coke Co., has been promoted to superintendent of Colonial No. 4 of the same company.

W. A. Dunkley, who has been a gas engineer on the staff of the Illinois State Geological Survey, has accepted a position with the U. S. Bureau of Mines and will be acting in charge of the Urbana Station of the Bureau. Mr. Dunkley will continue there to work on fuels processing with which he has been associated for some years past.

John Deering has severed his connection with the Chesapeake & Ohio at Logan, W. Va., to become a field representative of Jewett, Bigelow and Brooks of Cincinnati.

Announcement is made of the appointment of **Arthur C. Frey**, of Fairmont, as manager of the Monongah Co., succeeding his father, G. A. Frey, who for many years prior to his death recently had been the company's manager.

L. A. Maust, who for a number of years has been in charge of the freight business of the Morgantown & Kingwood R.R. at Sabraton has resigned to become secretary and treasurer of the Le Mar Coal Co. of Morgantown, W. Va.

B. C. Tucker, president of the Brilliant and Jean Coal Mining Companies, Cleveland, Ohio, left on Jan. 15 for Los Angeles and southern California where he will sojourn for six weeks.

F. A. Elmore who has represented the Houston Coal Co. in Indiana and Ohio, has been appointed western manager in charge of the Chicago office. **Robert W. Gruesser** will succeed Mr. Elmore in the Indiana and Ohio territory.

Frank O. Sandstrom, former traffic manager of the Denver Union Stock Yards, is the new secretary and traffic manager of the Colorado and New Mexico Coal Operators' Association, with headquarters at Denver. **George Williams**, who was to have succeeded **John G. Kerr**, resigned, did not enter upon his new duties for the reason that he accepted the place as general freight agent of the Rio Grande R.R., in Denver. The vacancy was caused through the death of William Lampton. Mr. Sandstrom in former years was traveling freight agent for the Colorado & Southern.

Industrial News

Pottsville, Pa.—The Coal Washing Equipment Co. has been formed to conduct the manufacture and sale of all James machinery for use in the coal industry, which equipment heretofore has been sold by James Ore Concentrator Co. The products of the company include the James Automatic Balanced Jig and James Coal Table. Noel Cunningham, H. A. Riley and H. O. Knapp are the leading officials.

Philadelphia, Pa.—J. Ray Quinn, recently appointed Eastern manager for Daniel Howard & Co., Clarkesburg, W. Va., coal operators, has established headquarters in the Land Title Bldg.

Pittsburgh, Pa.—The Locomotive Superheater Co. with general offices in New York City, announces the opening of their office at 382-388 Union Arcade Bldg., Pittsburgh. John R. LeVally, formerly sales engineer in the Chicago office of the company, has been appointed district manager.

Philadelphia, Pa.—The Eyre Fuel Co., of New York City, announces the opening of an office at 1103 Widener Building. It has appointed George J. Schonter as manager.

Bethlehem, Pa.—The Penn-Mary Coal Co. has sold or leased its entire properties to Bethlehem Mines Corporation. The entire business will be carried on by Bethlehem Mines Corporation, which has taken over and will perform all contracts, and is prepared to meet all outstanding obligations. All checks for accounts due Penn-Mary Coal Co. should be drawn to the order of Bethlehem Mines Corporation, and mailed to Bethlehem, Pa.

New Orleans, La.—The Austin Machinery Corporation of Louisiana, Inc., announces its incorporation as sole distributors for Louisiana, Arkansas, Mississippi, Tennessee, of the products of the Austin Machinery Corporation, manufacturers of contractors' equipment.

Coming Meetings

New England Coal Dealers Association will hold its annual meeting March 23 and 24 at Boston, Mass. President, W. A. Clark, Boston, Mass.

The American Society of Mechanical Engineers will hold its spring meeting May 23, 24, 25 and 26 at the Congress Hotel, Chicago, Ill. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

Northwestern Pennsylvania Coal Operators' Association will hold its annual meeting Tuesday, March 1, at the Old Colony Club, Pittsburgh, Pa. Secretary, T. E. Diefenderfer, Butler, Pa.

The Rocky Mountain Coal Mining Institute will hold its annual winter meeting Feb. 25 and 26 at the Albany Hotel, Denver, Col. Secretary, F. W. Whiteside 307 Ernest & Crammer Building, Denver.

National Chamber of Commerce will hold its ninth annual meeting at Atlantic City, N. J., April 27, 28 and 29.

Canadian Institute of Mining and Metallurgy will hold its annual meeting March 2, 3 and 4, 1921, at Ottawa, Ontario, Canada. Secretary-Treasurer, G. C. Mackenzie, Montreal, Quebec, Canada.